

IMPLEMENTING A REPEATED READING INTERVENTION TO IMPROVE THE  
READING FLUENCY AND COMPREHENSION OF MIDDLE-SCHOOL STUDENTS  
EXHIBITING READING DIFFICULTIES

by

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(Under the Direction of Cecil Fore)

ABSTRACT

The implementation of a response to intervention model for diagnosing students with a learning disorder mandates evidence-based strategies are utilized in the general education setting to assure quality instruction. It is anticipated that this new method of diagnosing students will eradicate the disproportionate number of minority students served through special education. The current study use a multiple-probe design to determine the effectiveness of a repeated reading intervention in increasing the reading fluency and improve the reading comprehension of students from culturally and economically diverse backgrounds. Results indicate the intervention was effective in increasing the reading fluency and improving the reading comprehension of the participants in the study. Limitations to the study and implications for future research are discussed.

INDEX WORDS: Response to intervention, Learning disorder, Repeated reading,  
Reading fluency

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B.A., The University of Georgia, 1996

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A Dissertation Submitted to the Graduate Faculty of the University of Georgia in Partial  
Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2008

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## DEDICATION

This is dedicated to Satchel, Gavin and Stefanie.

## ACKNOWLEDGEMENTS

I would like to thank every professor I've had at Piedmont and the University of Georgia. I've taken something for each one. I would also like to thank many of my fellow students. This would not have been as enlightening if not for your intellectual curiosity and encouraging spirit. I would also like to thank my family whom has assisted me throughout this arduous task. I would like to specifically thank my two sons, Gavin and Satchel, for putting up with me when I was more like a student and less like a father and my lovely and loving wife whom took my place when I was immersed in this project.

## TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	v
LIST OF TABLES.....	ix
LIST OF FIGURES.....	x
 CHAPTER	
1 INTRODUCTION.....	1
Rationale.....	1
Purpose.....	4
Research Questions.....	4
2 REVIEW OF THE LITERATURE.....	6
Search Methods.....	6
Review of the Literature.....	6
Elementary Studies on Reading Fluency.....	7
Middle-School Studies on Reading Fluency.....	24
High-School Studies on Reading Fluency.....	32
Heterogeneous Grade Level Studies on Reading Fluency.....	38
Response to Intervention, Learning Disability and the Diverse Student Population.....	43
3 METHODS.....	48
Experimental Design.....	48
Participants in the Study.....	48

Setting.....	49
Materials and Equipment.....	51
General Procedures-Overview.....	52
Initial Probe Procedures.....	52
Intervention and Measurement Procedures.....	53
Reliability.....	55
Internal Validity.....	56
External Validity.....	56
Social Validity.....	56
Data Analysis.....	57
4 RESULTS.....	58
Introduction.....	58
Research Questions.....	58
Analysis of Research Results.....	58
Words Read Correctly per Minute.....	59
Percent Comprehension Questions Answered Correctly.....	64
Number of Miscues.....	68
Relationship between Number of Words Read Correctly and Number of Miscues.....	73
Inter-rater Reliability.....	75
Social Validity.....	75
5 DISCUSSION.....	76
Introduction.....	76

Research Questions.....	76
Summary of the Results.....	77
Words Correct Per Minute.....	77
Reading Comprehension.....	78
Miscues per Minute.....	81
Repeated Reading and the Response to Intervention Model.....	82
Overall Findings.....	83
Limitations of the Study.....	86
Implications for Future Research.....	88
Conclusion.....	89
REFERENCES.....	92
APPENDICES.....	101
A Sample of reading passage and comprehension question.....	101
B Survey given to participating resource teacher to measure ease of implementation and perceived effectiveness.....	102
C Copy of Parental Consent Form.....	103
D Copy of Minor Assent Form .....	104
E Vita.....	105

## LIST OF TABLES

Table 1: Review of Elementary Studies on Reading Fluency.....	22
Table 2: Middle-School Studies Reviewed on Reading Fluency.....	31
Table 3: High-School Studies Reviewed on Reading Fluency.....	37
Table 4: Heterogeneous Grade Level Studies Reviewed on Reading Fluency.....	42
Table 5: Demographic information on the participants in the study.....	49
Table 6: Demographic information of the participating school.....	50

## LIST OF FIGURES

Figure 1: Families of Students Ages 6 Through 12, by Household Income Level and by Disability Status: 2000-01.....	46
Figure 2: Families of Students Ages 13 Through 17, by Household Income Level and by Disability Status: 2001.....	47
Figure 3: Participant 1 Words Read Correctly .....	60
Figure 4: Participant 2 Words Read Correctly .....	61
Figure 5: Participant 3 Words Read Correctly .....	62
Figure 6: Participant 4 Words Read Correctly.....	63
Figure 7: All Participants Words Read Correctly.....	63
Figure 8: Participant 1 Percent Comprehension Questions Answered Correctly.....	64
Figure 9: Participant 2 Percent Comprehension Questions Answered Correctly.....	65
Figure 10: Participant 3 Percent Comprehension Questions Answered Correctly.....	66
Figure 11: Participant 4 Percent Comprehension Questions Answered Correctly.....	67
Figure 12: All Percent Comprehension Questions Answered Correctly.....	68
Figure 13: Participant 1 Number of Miscues Committed Per Minute.....	69
Figure 14: Participant 2 Number of Miscues Committed Per Minute.....	70
Figure 15: Participant 3 Number of Miscues Committed Per Minute.....	71
Figure 16: Participant 4 Number of Miscues Committed Per Minute.....	72

Figure 17: All Number of Miscues Committed Per Minute.....	73
Figure 18: Participant 1 Relationship Words Read and Miscues Committed.....	74
Figure 19: Participant 2 Relationship Words Read and Miscues Committed.....	74
Figure 20: Participant 3 Relationship Words Read and Miscues Committed.....	75
Figure 21: Increase in Words Read Correctly by Participant.....	78
Figure 22: Increase in Percent of Comprehension Questions Answered.....	79
Figure 23: Increase in Percent of Inferential Questions Answered Correctly.....	80
Figure 24: Decrease in Number of Miscues per Minute.....	81

## CHAPTER 1

### INTRODUCTION

With the current emphasis on high-stakes testing and the push for full inclusion there are much higher expectations for not only the students, but also for the teachers themselves. One such example is the increased emphasis on evidence-based reading instruction at all grade levels and improved techniques of monitoring student progress. Prior to the signing of Individuals with Disabilities Education Improvement Act (IDEIA, 2004) President Bush signed the No Child Left Behind Act (NCLB, 2002) which mandates the use of evidence-based instructional strategies in the classroom. In fact, with the new laws related to diagnoses of students with a learning disability evidence-based instructional strategies must be provided to a student a minimum of two times before that student can be referred for further evaluation. With lack of adequate literacy skills being shown as an early indicator of future struggles throughout life (Anderson, Hiebert, Scott & Wilkerson, 1985) it would also follow that a response to intervention (RTI) model would be used to ensure adequate reading instruction is being provided to all students. A response to intervention model proposes that by providing evidence-based teaching strategies a learning disability would lie within the non-responsive students and not in poor teaching techniques which is something that can not be ruled out with the current diagnostic method.

#### Rationale

In order to assist educators in improving the reading ability of students the National Reading Panel (2000) and Put Reading First: The Research Building Blocks for Teaching Children to Read-Kindergarten through Grade 3 (Armbruster, Lehr, & Osborne,

2001) posed five reading instruction elements that should facilitate reading success in the classroom. Each element is a building block for the next stage in reading. In other words, students must achieve competency in each stage before being able to begin to master the next stage.

The first stage posed is phonemic awareness which is the ability to understand that words are made up of isolated, segmented sounds and can be manipulated to form words (Mather & Goldstein, 2001). The next stage is phonics which is the understanding of the rules that govern grapheme-phoneme associations (Mather, et al, 2001). For children to have an understanding of grapheme-phoneme associations consists of them learning that certain groupings of letters, as opposed to only individual letters, can produce sounds that can be used to make words. Once the previous two components were attained by the students the next component that was found to be essential, especially for students in the third grade and up, was reading fluency. Once the previous three stages have been acquired the remaining two, vocabulary and text comprehension, should follow.

While the first two building blocks are typically taught in early elementary school, reading fluency is taught throughout late elementary grades and into middle school. Those students that never become fluent readers will continue to have reading difficulties, especially in text comprehension, throughout their lives (LaBerge & Samuels, 1974). In fact, many students that have reading disabilities exhibit difficulties in reading fluency and active text comprehension (Billingsley & Wildman, 1988; Therrien, 2004). Fluency has been characterized as the ability of students to read accurately with proper phrasing and at a suitable speed (Reutzel & Cooter, 2000) and as the reflexive

ability to read text in a quick, smooth, effortless manner with little attention given to technicalities such as punctuation and decoding (Meyer & Felton, 1999). Reading fluency is considered a vital skill for students to gain in order to comprehend what they are reading and thus becoming an efficient and proficient reader (Armbruster, et al, 2001; Samuels, 1979; Therrien, 2004).

Two strategies that have shown to be effective in enhancing both fluency and active text comprehension are question generation and repeated readings (National Reading Panel, 2000). Repeated reading is an instructional strategy that has been evidenced as an effective method to improve fluency among students with reading difficulties across a wide age group (Dowhower, 1987; Homan, Klesius & Hite, 1993; Stoddard, Valcante, Sindelar, O'Shea & Algozzine, 1993; Therrien, 2004; Therrien & Kubina, 2006; Therrien, Gormley & Kubina, 2006). Although there are two schools-of-thought as to why repeated readings is effective (LaBerge et al, 1974; Schrieber, 1980) both agree to its efficacy as a method to improve the reading fluency of students exhibiting reading difficulties.

The following review of the literature will examine studies that utilize repeated readings as an instructional strategy to improve the fluency of students that exhibit reading difficulties. Although there are other skills repeated readings have shown to enhance, specifically text comprehension, this review of the literature will focus on improvements to students' reading fluency. This review will be organized by grade level beginning with early elementary studies and continuing through with studies using secondary students. The review concludes with studies that examine the effectiveness of repeated readings on reading fluency with heterogeneous grade levels. In other words,

studies that examine the effectiveness of repeated readings across more than one grade level.

### Purpose

The purpose of this study is to evaluate the efficacy of repeated readings as a strategy to increase the reading fluency to a level that will make comprehension of text more likely. Increasing the reading fluency has been shown to enhance the comprehension of text in struggling readers while at the same time improve overall academic performance. While the literature base on repeated reading continues to expand the manner in which it will be utilized under a response to intervention model has yet to be answered. The use of a multiple-probe design will demonstrate the efficiency as well as the effectiveness of repeated readings as a strategy to improve reading fluency and text comprehension.

A secondary purpose of the current study is to examine the usefulness of repeated readings in the context of a response to intervention model and how effective is this strategy on enhancing the reading fluency and text comprehension of students from varied backgrounds. At the conclusion of the review of the literature on repeated readings a section on response to intervention will ensue in which the usefulness of such a model will be discussed as well as the anticipated benefits to minority students.

### Research Questions

The following study will attempt to answer three separate research questions. The first research question will be the primary focus of the study. The dependent measure used to answer the research questions will be the number of words read correctly per

minute. A secondary dependent measure will be the number of comprehension questions answered correctly.

- 1) If a passage of approximately 200 words slightly above the reading level of a student is read repeatedly will the student increase the number of words read correctly per minute over a 10 week period?
- 2) If a passage of approximately 200 words slightly above the reading level of a student is read repeatedly will the student increase comprehension of the passage over a 10 week period?
- 3) Will the strategy of repeated reading effectively increase the reading fluency and improve passage comprehension with a group of students that are culturally and economically diverse?

## CHAPTER 2

### REVIEW OF THE LITERATURE

#### Search Methods

In order to accrue the existing research on the relevant topics a series of computer search strategies were utilized. These strategies were initially used to locate research articles that employed repeated reading as a technique to enhance the reading skills of students. A computerized search was performed through the Galileo search system of the University of Georgia using key words alone or in combination such as repeated readings, repetitive reading, oral reading, oral reading fluency and fluency. An additional hand search was conducted in relevant research journals from 1981 to 2007, including the *Journal of Learning Disabilities*, *Learning Disabilities Quarterly*, *Teaching Exceptional Children*, *Behavioral Disorders*, *The Journal of Special Education* and *Exceptional Children*. Of the 54 articles found using the two search methods only fifteen were experimental in nature. Those articles are reviewed below.

#### Review of the Literature

The following review of the literature will examine studies that utilize repeated readings as an instructional strategy to improve the fluency of students that exhibit reading difficulties. Although there are other skills repeated readings have shown to enhance, specifically text comprehension, this review of the literature will focus on reading fluency. This review will be organized by grade level beginning with early elementary studies and continuing through with studies using secondary students. The review concludes with studies that examine the effectiveness of repeated readings on

reading fluency with a heterogeneous grade levels. In other words, studies that examine the effectiveness of repeated readings across grade levels.

### Elementary Studies on Reading Fluency

The following is a review of the literature on studies that examined the reading fluency of participants that were in elementary grades. Jitendra, Edwards, Starosta, Sacks, Jacobson & Choutka (2004) used a multiple probe design across participants to determine the effectiveness of the Read Well program for students in first, second and third grade. The study was conducted over a two year period with two students participating in both years of intervention. The first year the four students were chosen by teacher referral for at risk for reading failure. Students were considered at risk if they were not making sufficient progress with regular reading instruction or supplemental instruction in the classroom. Five of the seven participants were being served in special education for a disability. Two students served as controls for each study given a total of five participants over the two studies.

Dependent measures for this study were operationally defined as phonemic segmentation fluency, letter naming fluency, letter sound fluency, nonsense word fluency, word accuracy, passage fluency, reading comprehension and consumer satisfaction. All academic measures were based on the Dynamic Indicators of Basic Early Literacy Skills, Woodcock Reading Mastery Test-Revised, Children's Educational Services for oral reading fluency or an authors' generated satisfaction scale.

A multiple probe across participants was used to determine the effectiveness of the Read Well program developed to improve decoding as well as comprehension skills in beginning or remedial students. The procedure began with a baseline where all reading

and comprehension measures were taken. Students participated in their regular reading instruction with authors offering only praise for completion of assignments. The students were then introduced to the Read Well program individually. Instruction varied from 20 to 40 minutes a session for a maximum of seven weeks. Inter-rater agreement was performed for sixty percent of both baseline and intervention sessions with agreement being 97.8% and 99.6% respectively. Implementation fidelity was also assessed for 60% of the sessions of the Read Well program with fidelity being reached 92.5% of the time.

Results for the first study indicated an increase from baseline on all measures when intervention was introduced. The mean words read correctly per minute (WCPM) increased from thirteen to twenty-six for one participant, from forty to fifty-eight WCPM in a second participant and from thirty-eight to seventy-three WCPM. Results from the second study reveal no increase in WCPM for any of the participants. Phonological awareness was improved after introduction of the intervention for all but one participant. The results for alphabetical understanding and decoding were mixed between the participants. The intervention appeared to improve aspects for some students while not improving aspects for others. Word identification increased for three of the five participants over the two studies. The intervention appeared to improve comprehension scores for only two of the five participants.

The results reveal that the Read Well program was somewhat effective in improving some aspects of the participants' reading skills. The short intervention phase was mentioned as a possible reason more of an effect was not achieved. Four of the five participants improved their nonsense word fluency after being introduced to the

intervention. This would lend support for using this program to attempt to increase reading fluency for young elementary students.

Nelson, Alber & Gordy (2004) implemented a study using a multiple-baseline across participants to determine the effects of systematic error correction and systematic error correction with repeated readings on the reading accuracy and proficiency of four primary-aged students who attended a special education resource room for reading instruction. Three of the students were diagnosed with having a learning disability and the fourth was diagnosed with attention deficit/hyperactivity disorder. The students attended a resource room for reading instruction from one to three hours a day and attended a regular education second grade classroom the remainder of the day. The special education teacher working with these students stated that each student was one to two years behind in reading and increasing reading achievement was a priority for these students.

The dependent variables in this study were operationally defined as the number of words read correctly in context per minute and the number of errors per minute. The words was counted as correct if the student independently pronounced the word correct within three seconds without prompting from teacher. The word was counted as an error if it was pronounced incorrectly, miscued, omitted or not stated within three seconds. Interobserver reliability was measured on fifteen percent (5 of 33) of the observations and found to be at 100% for all four students. Treatment fidelity was measured on eighteen percent (6 of 33) of the observations and found to be at 83%.

The baseline condition consisted of the student reading a selected passage for five minutes and with each error or miscue the teacher immediate told the student the correct

pronunciation of the word without having the student repeat the word. After five minutes the student was asked to read for one minute while the teacher recorded the number of correct and incorrect words.

Condition II (systematic error correction) consisted of the student reading a selected passage for five minutes and each time the student made an error the teacher would correctly pronounce the word and have the student repeat the word and reread the sentence. At the end of five minutes the teacher reviewed all the words the student had missed by pointing to the word in the passage and had the student pronounce the word. If an error occurred during this review the teacher correctly pronounced the word and had the student repeat it. After systematic error correction was complete the teacher had the student reread the passage for one minute and recorded the number of correct and incorrect words read.

The procedure in condition III (systematic error correction with repeated reading) was identical to condition II with the exception of the student reading the passage for three minutes as opposed to five minutes. At the end of the three minutes the student was asked to read the passage from the beginning and timed for one minute. This was repeated for three times with correct and incorrect words read recorded during the last minute only. This exposed the students to the beginning of the passage much more than in condition II. This was done to control for the time spent interacting with the reading material as a possible explanation for increase reading performance.

A final condition was conducted which was identical to the previous condition only the students read from passages that were used in the baseline condition. This was done due to the fact that the reading curriculum chosen for this study became increasingly

difficult. This condition allowed for measurement of passages previously read by the students.

Results indicate that although there was a modest increase in the groups mean number of words read per minute after systematic error correction there was a substantial reduction in the number of errors per minute for all students. In the third condition of the study which consisted of systematic error correction with repeated reading the opposite effect was revealed. All four students made substantial gains in words read correctly per minute. However, all but one increased the number of errors per minute. In the final condition of the study, which consisted of systematic error correction and repeated reading with previously read material, all but one student made slight gains in the number of words read per minute and all decreased the number of errors made per minutes.

The results demonstrated a functional relationship with all four student make gains in the number of words read per minute while decreasing the number of errors made per minute. The number of words read correctly did not begin to increase until the second intervention condition which is the point repeated reading was implemented even though the number of errors made did decline. This is consistent with other research on repeated reading and the effect it has on reading fluency. However, each student remained almost a year behind the average student achievement in reading at the end of the study. This must bring into question of the social validity of the study. Even though significant gains were made with implementation of the interventions the gains did not bring the students up to grade level in reading achievement which, as the authors point out at the beginning of the study, is required by the No Child Left Behind Act (2002).

Dowhower (1987) examined the effects of a repeated reading program with eighteen beginning second-graders that exhibited difficulties in reading. Specifically, the time-series experimentally designed study attempted to investigate the effectiveness of assisted and unassisted repeated reading on improving the reading rate, word recognition accuracy and oral reading comprehension on second grade students considered transitional readers. A secondary purpose of the study was to determine if assisted and unassisted repeated readings had a positive effect on the prosodic reading of the students. Seventeen students met the criteria of a reading rate of less than fifty words per minute on a second grade passage of two hundred words, word identification scores of 85% or higher on the same passage and a stanine score of four to six on the Sequential Test of Educational Progress. Nine students were randomly assigned to the unassisted group and eight students were randomly assigned to the assisted group.

The study began by the authors breaking six four hundred word passages into two separate passages of two hundred words each with mean sentence length being eight to nine words. Then each student began by reading the first part of the practice passage. Scoring of the dependent measures was taken at this point as the baseline score. This initial passage was used for every student in both groups. Then each student was randomly given a second two hundred word passage to read. This passage would be repeated either with or without assistance until a predetermined criteria was met. Once the criteria was met the students was given the second half of the passage to read for the first time and scores on the dependant measures were taken to determine any within passage gains. Five series of passages were read using this procedure upon which a posttest using the second half of the initial passage was given.

Results indicated that repeated readings, regardless of assisted or unassisted, enhanced the reading rate, accuracy and comprehension of students that exhibited reading difficulties. These improvements were not just found within the passage readings, but also carried over to the posttest scores for the initial passage. Both groups made gains in rate, accuracy and comprehension from the pretest to posttest and the number of readings required to meet criteria decreased over the five reading series. Repeated readings also appeared to improve the prosodic reading in both groups with pauses decreasing and mean length of phrases for both groups increased. The basic conclusion of this study was that repeated readings assisted transitional students in reading faster, more accurately and enabled them to comprehend what they read better regardless of the training used. One finding that has been further examined in other studies is the effectiveness of using more than one story for practice purposes. It is suggested that presenting students with a wider variety of passages increases the vocabulary in which they are exposed. This increased exposure with assist in enhancing there fluency and comprehension in other passages.

Rasinski (1990) implemented a study that compared the effects of repeated reading with a reading-while-listening approach to improve fluency. The study examined the effects each strategy had on the fluency of 20 third graders from different elementary schools in a community in the southeastern United States. Fluency was defined in terms of reading speed and word recognition. The participants were paired into high, average and low reading groups based on classroom teachers' judgment and standardized test scores. Seven pairs were deemed high, two average and one group was labeled low.

The study utilized two equivalent 100 word passage that was considered at a fourth grade level from a commercially produced reading inventory. Fourth grade

passages were used to ensure students had some difficulty initially. A pretest was given to each group by having the student read one of the two passages and reading speed and word recognition was established through recordings. The first treatment consisted of one student in the group read the passage while the other student followed along. This phase lasted for two days with a posttest given to both students on the fourth day. The posttest was identical to the pretest in that both student were taped reading the passage as best they could.

The results indicated that there was no difference in rate or accuracy dependent on the order of treatment. In other words, rate and accuracy were not dependent on which strategy the student received first. Reading speed and accuracy were both statistically significant at the .01 level. This would suggest that both strategies, repeated reading and reading-while-listening, can improve the fluency of students. In fact, the author made a point to state that reading-while-listening can be an equally effective alternative to repeated reading to improve fluency in reading.

Begeny and Silber (2006) conducted a study with four third graders to determine the effects of group-based packages on reading fluency. The students were identified by their teachers as needing additional reading support, but were no more than two grade levels behind in reading. Also, none of the students were currently diagnoses with a disability of any kind. It was concluded that their instructional levels were from first to third grade and all participants were on free and reduced lunch programs.

An alternating treatment design was used with a combination of three different interventions to make a total of four different intervention packages. The three different types of group-based interventions used were repeated reading (RR), listening passage

preview (LPP) and word-list preview (WLP). WLP lasted around three to four minutes and consisted of the teacher writing approximately 20 words on the chalkboard and the class chorally reading the words chosen by the teacher. Upon completion of the words as a group the teacher would call on individual students to read selected words. To establish a baseline three separate passages were read that were commensurate with those used during training sessions. Students were not given practice with the passages and two days after the first reading they were asked to reread the passages. The LPP condition consisted of the teacher reading a selected passage at approximately one hundred words per minute while the class followed along silently with their copies of the text. The teacher would stop periodically to call on a student to ensure class participation. This condition lasted approximately two minutes. The RR condition entailed the students being paired together and one student read the passage to the other student while the nonreader followed along and gave any assistance needed. Each student served as reader and nonreader twice in the four to six minutes the condition lasted.

Interventions sessions consisted of implementing one of four different packages a day every other day. The four packages consisted of 1) RR+LPP+WLP 2) WLP+LPP 3) LPP+RR 4) WLT+RR. Just prior to and immediately after each session a research assistant had each student read the training session and recorded the words read correctly per minute (WCPM). In addition, the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency and Retell Fluency administration procedures were used during all passages. The one way the procedures were not followed was that the students were told to read the entire passage and the research assistant recorded the last word read

after one minute. The research assistant then asked the student to retell as much of the story as they could.

Procedural integrity scores were taken on 37.5% of the sessions with percentage of steps followed accurately ranging from 98.1% to 100%. Interobserver reliability scores were taken during 44.2% of the sessions with agreement percentages ranging between 89% and 100% with an average agreement of 98.7%. Half of the sessions were observed live and the other half used audiotape recordings of the students' readings to determine agreement on response.

Results indicate that using the RR+LPP+WLP package had the most effect on both immediate gains as well as retention gains, which were derived from the students WCPM scores on a passage two days after an intervention was used. The second most effective package was the one comprised of the LPP+RR interventions, however the gains were not nearly as strong and the combination of all three. Another interesting finding was the implementation of any package increased gains significantly more than baseline data. This would indicate that any combination of these interventions would be somewhat effective in increasing the reading fluency of a struggling reader.

One aspect that highlights this study is the fact that the implementation time, from a teachers' perspective, is relatively small. During the student the average time to implement the full package (RR+LPP+WLP) was nine to twelve minutes. This is a relatively small amount of time for a group-based package with such productive results. Also, the retained gains for three of the four students were noteworthy. The use of the relatively easy package could not only produce immediate improvements in reading fluency, but also produce gains that could stay with the student in the future.

Yurick, Robinson, Cartledge, Lo and Evans (2006) conducted three studies using a multiple-baseline across participants to determine the effectiveness of peer-mediated repeated readings on the correct words read per minute, reading accuracy and comprehension with twenty-two students, eight were in the fifth grade, eight were in the third grade and six were in the fourth grade.

Prior to the first study commencing letter-word identification and passage comprehension scores were derived from a test of achievement. The dependent measures were words read correctly per one minute (WCPM), accuracy and number of comprehension questions answered correctly. Words correctly read per one minute was operationally defined as the number of printed words read from the first word read to the last in their entirety in one minute. Accuracy was determined by subtracting the miscues from number of words read correctly and dividing by total number of words read and multiplying by one hundred. A word was consider not read correctly if the student omitted the word, inserted a word, substituted a word, self-corrected their mistake or sounded out a word incorrectly or incompletely. The number of comprehension questions answered correctly was measured by providing the student with a copy of the passage they had been reading with five words omitted and replace with blanks. The students were to fill in the blanks with the correct word in order for it to be counted and a comprehension question answered correctly.

Sustained silent reading was introduced with the students as the baseline phase. The students were given a 200 word passage from a set of books that gradually increased in difficulty and told to silently read the passage for ten minutes as best they could without assistance from the teacher. The students were then taken out to the hallway and

asked to read the passage aloud to the teacher while the WCPM and accuracy dependent measured were documented by one of the authors. All students scored at approximately a fourth grade reading level initially.

The students were then trained in the paired repeated reading (RR) where the students were paired together and trained on how to correct their partner when he or she encountered a miscue. The students continued this for ten minutes at which time they were called into the hallway and asked to read the passage for one minute. Their WCPM and accuracy scores were recorded at this time and the students also plotted their score in their RR folder. Once the student reached 180 WCPM and less than ten errors they were given five comprehension questions to answer on the passage. If the student answered all five questions correctly they moved on to the next passage which increased in difficulty. The initial passage was judged to be on a fourth grade level and the passages increased to the fifth and sixth grade levels of difficulty and two young adult passages were introduced to those that progressed passed the sixth grade passage.

The results of the first study indicated that all but one student met the 180 WCPM with less than ten errors goal at the sixth grade level passages. Six of the eight students advanced to the young adult passages and four advanced to the second young adult passages. Accuracy increased from 90% to 95% after the intervention was introduced. All students maintained this level of accuracy despite the increased difficulty in the reading passages. All but one student answered all five comprehension questions correctly the first attempt on the fourth grade passages. All but two answered all five comprehension questions correctly on the first attempt on the fifth grade passages. All students answered the comprehension questions correctly on the sixth grade passages. A posttest using an

alternate form of the achievement test was administered. Comprehension measures indicated a mean of one year increase in grade equivalent scores. Word identification measures indicated an increase of four months increase in grade equivalent scores. There was approximately four months from pretest to posttest.

Study two was conducted at the same location the following year with eight third grade students. The procedures were identical as in study one with the exception of the authors recorded a generalization measure. During the baseline phase students were given ten minutes to read an unpracticed third grade passage and then asked to answer five comprehension questions. During intervention phase the students were only given one minute to read the passage and then answer five comprehension questions.

The results of study two indicated that the students made significant gains in WCPM, accuracy and comprehension. The students increased the WCPM score from a group average of 58.7 WCPM to 90.4 WCPM. The group also improved their accuracy from 89% accurate during baseline to 95.9% accurate. The group also increased the number of comprehension questions answered correctly on the first attempt from a group average of 2.9 answered correctly during baseline to 4.9 answered correctly during the repeated reading phase. The group maintained this improved fluency over the course of the study as evidenced by the generalization scores indicating a group mean of 19.8 WCPM increase on generalization measures. Based on the posttest administered to the group an increased their grade equivalency in letter-word identification by four months, reading fluency by seven months, passage comprehension by three months and word attack by seven months.

Study three was conducted at the same school as the previous two studies and during the same school year and study two. The participants were six fourth-grade students chosen based on referral from their teacher as being the lowest readers in the class. Procedures and dependent measures were identical to study two with the only exception being that the peer-mediated repeated reading took place in a pull-out model. The group increased their WCPM from a baseline of 66 WCPM to 117 WCPM. The group improved their accuracy from 89% accuracy during baseline to 94% accuracy during intervention phase. Comprehension scored increased over the term of the study with students answering on average 2.4 questions correctly to answering 4.9 questions correctly during intervention. The posttest administered to the group indicated the group increased their grade equivalency in letter-word identification by four months, reading fluency by seven months, passage comprehension by seven months and word attack by one year and three months.

In all three studies students increased their oral reading rate and accuracy compared to baseline. An interesting finding was that the accuracy actually increased as the rate and difficulty increased. The results from these studies on the increase in comprehension measures support the suggestion by Samuels (1979) that as the student attends less to fluency it allows him to attend more to comprehension. Thus, an increase in fluency can also improve comprehension in the student.

Sindelar, Monda and O'Shea (1990) used a 2 X 2 X 2 factorial design to determine the effectiveness of repeated readings with twenty-five elementary students with a disability compared to twenty-five students without a disability. The students were also determined to be either at the instructional level of reading or the mastery level.

Seventeen participants in each group was determined to be at the instructional level while eight in each group were determined to be at the mastery level. The dependent measures were number of words read correctly per minute, number of errors committed per minute and the number of propositions retold by the participants.

The participants were given two passages to read. One passage they were to read aloud one time and then recall as much of the story as they could and the second passage they were to read three times and recall as much as they could. Words read correctly and errors committed per minute measures were taken after each reading with the propositions retold measure was only taken after the predetermined number of readings.

Results for this study found that there was not a significant difference in number of words read per minute between students with and without a disability. A significant difference was found between the two groups on the number of errors committed per minute. Although the group with disabilities committed more errors than the group without disabilities they committed fewer on passages read three times than read only once. The group without disabilities committed more errors on the passages read three times than on the one read only once. There was no difference between groups on the number of propositions retold. These findings are interesting in the fact that repeated readings appear to enhance fluency and recall ability in both disabled and non-disabled students.

Table 1

*Review of Elementary Studies on Reading Fluency.*

<b>Citation</b>	<b>Question</b>	<b>Participants</b>	<b>Procedure</b>	<b>Measures</b>	<b>Results</b>
Jitendra, A.K., Edwards, L.L., Starosta, K., Sacks, G., Jacobson, L., Choutka, C.M. (2004).	Evaluate the effectiveness of a supplemental tutoring program with seven elementary students to improve reading, spelling and comprehension over a two year period	Seven elementary students in the first, second and third grade ranging in age from 6-9 years to 10-5 years	Multiple probe across participants	Phonemic segmentation fluency, alphabetic understanding and decoding, words correct, passage fluency, reading comprehension, social validity	Over the two years of the study's duration all participants made gains in all dependent measures
Nelson, J.S., Alber, S.R. & Gordy, A., (2004)	Determine effects of systematic error correction and systematic error correction and repeated reading on primary students with a learning disability that attend a resource room for reading instruction	4 second grader, 3 males and 1 female, which attended a resource room for reading for 1 to 3 hours a day	Multiple-Baseline across Participants	Number of words read correctly in context per minute and number of errors per minute	Results indicate slight increase in words read correctly after systematic error correction was implemented while all four participants exhibited substantial increases in words read correctly per minute while decreasing the number of incorrect words per minute
Dowhower, L. (1987)	Determine the effectiveness of repeated readings on the speed, accuracy and comprehension skills of elementary students	seventeen second grade students	Time series experimental	Correct words per minute, number of word identified correctly and number of literal questions answered correctly	Participants exhibited significant gains in reading rate, accuracy and comprehension

Citation	Question	Participants	Procedure	Measures	Results
Rasinski., 1990	Compared repeated reading with reading-while-listening on reading fluency	20 third grade students in a southeastern state	Pretest/Posttest design	Reading speed and word recognition	Indicate no difference on fluency between two interventions
Begeny, J.C. & Silber, J.M., (2006)	Examine the effects of repeated reading, listening passage preview and word-list training on reading fluency and a combination. A second question explored the relationship between immediate and retained gains.	4 third graders not diagnosed with a disability, but no more than 2 years behind in reading	Alternating Treatment	Words correct per minute as measured by the DIBELS Oral Reading Fluency and Retell Fluency	All four students made improvements with each intervention and combination of intervention with the most robust being when all three were used in combination
Yurick, A.L., Robinson, P.D., Cartledge, G., Lo, Y. & Evans, T.L. (2006).	Examine the effects of peer-mediated repeated readings on the reading fluency, accuracy and comprehension of 16 elementary students	Eight elementary students participated in the first study and eight more students participated in the following two studies	Multiple baseline across participants	Number words read correctly in one minute (wcpm), accuracy and number of comprehension questions answered correctly	Word read correctly per minute increased by an average of 68 wcpm, accuracy increased by 5% and comprehension improved a year
Sindelar, P.T., Monda, L.E. & O'Shea, L.J. (1990)	Determine the effects of repeated readings with disabled and non-disabled students	Fifty participants, twenty-five with a disability and twenty-five without	2X2X2 factorial with classification, level and number of readings being the factors	Correct words read per minute, errors per minute and number of propositions retold	Results indicate that disability classification was not a significant factor, however level and number of readings were

### Middle-School Studies on Reading Fluency

The following is a review of the literature on studies that examined the reading fluency of participants that were in middle grades. Homan, Klesius and Hite (1993) compared repeated readings with other nonrepetitive strategies on the fluency and comprehension of twenty-six below grade-level readers in the sixth grade. Each participant was randomly assigned to either receive the repeated reading strategy or a nonrepetitive strategy. There were thirteen participants in each group. The purpose was to determine if either strategy had an effect on fluency and comprehension. The secondary purpose was to determine which strategy had a greater effect. The three nonrepetitive strategy employed in this study were echo, unison and assisted cloze reading. Echo reading is when the teacher reads a word or sentence and then the student will read the word or sentence. Unison reading is when the student and teacher read together with the teacher assuming the lead role. Assisted cloze reading is when the teacher reads a passage and intermittently stops to allow the student to provide the next word in the passage. In each nonrepetitive strategy the passages are read only one time by the student.

Twelve passages were chosen for measurement purpose. These passages were divided in two groups and used as pretest and posttest measures. Students that received a passage from group A during pretest were given an equivalent passage from group B and vice versa. The strategies were implemented by three different teachers three times a week for twenty minutes at a time over a seven week time frame. The nonrepetitive strategy used echo reading the first session, unison reading the second session and assisted cloze the final session of the week ensuring all three were used every week.

Results indicate both groups made significant improvements in decreasing the number of errors committed, increasing the number of correct words read per minute and improving their comprehension of passages read. The nonrepetitive group decreased the number of errors committed from 10.15 to 8.38 errors made. The repeated readings group decreased their number of errors from 9.49 to 8.62 errors made. Both groups also decreased the amount of time to finish a passage with the nonrepetitive group going from 147.46 seconds to 141.44 seconds to complete the passage and the repeated readings group going from 129.87 seconds to 125.18 seconds to complete the passage. The only significant difference found between the two groups was in the comprehension section of the study. The repeated readings group improved their retelling ability from an initial score of 46.47 to 54.79 on the posttest measure. The nonrepetitive group improved from an initial score of 50.72 to 61.67 on the posttest measure. Although both groups improved significantly the improvement was greater in the repeated readings group.

Alber-Morgan, Ramp, Anderson, & Martin (2007) conducted a study to determine the effects repeated reading along with error correction and performance feedback had on the fluency and comprehension of students that exhibited behavioral issues. The study included three males and one female in middle school with ages ranging from 12 to 15 that exhibited behavioral problems and were being served in an outpatient program. Two students were diagnosed with emotional behavioral disorder and two students were diagnosed with a learning disability, but were all served in the self-contained setting.

A series of 35 reading passages were used at the students reading level to determine baseline data for each participant. Each student was provided a new reading passage for each new session. The experimenters developed four new literal and four new

inferential questions for each passage presented to the students. The questions were eventually examined by special education teacher to determine the equality in difficulty. The stories were then randomly assigned to each condition. The reading level did not change within groups throughout the scope of the study.

Baseline data was collected by one of the experimenters having a student read a passage and the experimenter collecting data on the number of correct or incorrect words read in one minute. The researcher then prompted the student to continue to read the passage to determine the number of literal or inferential questions answered by the student. The average time to read the passage was five to seven minutes. Immediate praise was offered after the completion of the comprehension part of the test. The researcher expressed praise for the hard work the student had done in completing the assignment.

During the repeated reading measure component on this study the experimenter collected data on the number of incorrect pronunciations and then repeated words for the student to be recalled by the student or repeated by the experimenter. The student was then told that they would be timed on how many words they could read in one minute. The student was given two chances to read the passage and the second chance always produced an increase in reading rate. The experimenter always gave praise for increase in reading rate. A comprehension test was given immediately after the fluency test was given. The experimenter gave praise for increase in comprehension rates after posttests were given.

The repeated reading and prediction session included the student reading the title and predict what the story was about. The student was then asked to read the first two

sentences of the passage and again predict what the story was about. Upon conclusion to the reading of the passage the experimenter and student discussed the accuracy of the student's prediction and then a one minute timed reading and a eight-item comprehension test. The prediction component added about one minute to the repeated reading procedures.

Training is detailed including what was considered an error in word recognition and how to deliver the comprehension questions. Data-collectors were able to role-play each step in the procedures to 100% accuracy after receiving comments from the first author. Interobserver reliability on word accuracy was assessed during 23% of the sessions and 23% of the comprehension sessions. The word recognition sessions produced an 99.25% interobserver accuracy. The interobserver reliability for comprehension was 98.75%. Treatment fidelity was assessed during 16% of the sessions and found to be at 100%.

Results indicate an increase in word accuracy for three of the four students after the introduction of repeated reading. An improvement is also exhibited after the prediction session is introduced with each student. Reading rates ranged between 38.8 to 91.6 in baseline, 95.6 to 133.7 in the repeated reading session and 117 to 154 in the repeated reading and prediction session. Errors per minute were also reduced during both intervention sessions. Mean error rates during baseline ranged from 2.8 to 3.7 errors per minute. During repeated reading errors per minute dropped to a range of 1.4 to 3.6. Errors also dropped again during repeated reading and prediction to a range of 1.1 to 1.5. The results indicate that repeated reading with and without prediction had more of a stabilizing effect on reading comprehension than such a dramatic increase in the number

of questions answered correctly. Repeated reading with and without prediction had a stronger influence on fluency than comprehension. This is consistent with other research referred to by the authors.

Strong, Wehby, Falk and Lane (2004) conducted a study with six male middle-school students diagnosed with emotional and behavioral disorder and served in a self-contained school for students that exhibited behaviors that were deemed too extreme to handle in the regular school setting. However, not ever student in the school was diagnosed with emotional and behavioral disorders. The questions to be answered by the study were what would the impact of a particular reading curriculum have on the reading fluency and comprehension with student diagnosed with emotional and behavioral disorder and would there be an additive effect when repeated reading was implemented to complement the reading curriculum.

The dependent variables described in this study were in the areas of reading and social skills. The authors used the Woodcock Reading Mastery Tests-Revised and the Gray Oral Reading Test-Third Edition to measure the reading baseline variables and the Social Skills Rating System to measure the social skills baseline variables in this study. The authors used a direct instruction method to measure weekly probes. The baseline session lasted for five weeks with direct instruction being the method of instruction.

Phase I of the intervention used the Corrective Reading Curriculum which is aligned with the direct instruction approach. The teacher used Corrective Reading for approximately 40 minutes to the entire class for four days a week. Treatment integrity was measured during seven of the treatment implementations with accuracy ranging from 80% to 100% with a mean being 95%.

Phase II of the intervention phase included the steps in phase I with the addition of a repeated reading strategy to compliment the Corrective Reading Curriculum. Treatment integrity was measured during four sessions in phase II and the range was 90% to 100% with the mean accuracy being 95%.

Results reveal that two of the three groups of two exhibited an increase in fluency with participant 1 increasing from a mean of 32 words correct per minute to 39.71 words per minute and participant 2 from a mean of 17 to 20.71 words per minute. Group 2 also exhibited increases with participant 3 increasing from 43.4 to 62.18 words per minute after phase I of intervention. Participant 4 increased from 27.2 to 35.72 words per minute after phase I of intervention. Upon introduction of phase II all four participants displayed an increase in words per minute. Participant 1 increased from a mean of 39.71 to 51.1 correct words per minute. Participant 2 increased from a mean of 20.71 to 34 correct words per minute. Participant 3 increased from a mean of 62.18 to 79.5 correct words per minute and participant 4 increased from a mean of 35.72 correct words per minute to 50.25 correct words per minute after implementation of phase II of intervention. Comprehension questions answered correctly increased steadily for all participants during phase I and phase II of intervention during this study.

Limitations were discussed in the article which included the number of times the students were absent and the limited time the third group was exposed to phase II of intervention it should also be pointed out that some of the data points during the interventions lends themselves to questions. For example, data point nineteen and twenty-one during the direct instruction sessions show a dramatic increase for all groups in spite of the fact that two of the groups were in phase II and one was in transition from phase I

to phase II of intervention. This would indicate that the passages were not consistent in their readability for the students otherwise these two data points would not be consistently high for every group. Probe eighteen and twenty of the seventh grade probes seem to indicate a dramatic increase in level in spite of the phase of intervention for the group. Again this might indicate that the reading passages were inconsistent with the other passages presented in other probes. Overall it appears that repeated reading did have an additive effect when included with the Corrective Reading Curriculum for a majority of students in this study.

Table 2

*Middle-School Studies Reviewed on Reading Fluency*

<b>Citation</b>	<b>Question</b>	<b>Participants</b>	<b>Procedure</b>	<b>Measures</b>	<b>Results</b>
Homan, S.P., Klesius, J.P. & Hite, C. (1993)	Compare the effects of repeated readings with nonrepetitive strategies on reading performance	Twenty-six below grade-level sixth grade readers	Pre-posttest group design	Number of errors committed during a reading, number of correct words read per minute and comprehension were measured	All participants made improvements in accuracy, fluency and comprehension with repeated reading having a significant greater effect on comprehension than the nonrepetitive strategies
Alber-Morgan, Ramp, Anderson & Martin, 2007	Effects of repeated reading combined with systematic error correction and performance feedback on reading fluency and comprehension	4 middle school students (3 males & 1 female) in outpatient program due to behavioral problems	Multiple-Baseline across Participants	Correct words per minute, errors per minute and literal and inferential questions answered correctly based on the Analytical Reading Inventory	Words per minute increased with repeated reading and combination of interventions. Errors per minute was reduced with repeated reading, but was reduced further when prediction was included. Comprehension became more consistent after intervention
Strong, A.C., Wehby, J.H., Falk, K.B. & Lane, K.L., (2004)	Determine impact repeated reading had on multiple fluency measures with middle school students diagnosed with emotional and behavioral disorder	6 male students in the seventh and eighth grade in a self-contained classroom in a southeastern metropolitan city	Multiple-Baseline across Participants	Correct words per minute and comprehension questions on the Woodcock Reading Mastery Tests-Revised, the Gray Oral Reading Test-III & SSRS.	Results indicate improvements in both fluency and comprehension for four of the six participants with a ceiling effect attributed to the lack of effect for the two participants

### High-School Studies on Reading Fluency

The following is a review of the literature on studies that examined the reading fluency of participants that were in high-school. Carver and Hoffman (1981) conducted two studies to examine the effects that repeated reading had on fluency. The authors, using a group design, conducted two studies using six high-school students in each that were reported to read poorly. The second study, replication study, was immediately conducted after completion of the first study. Both studies were completed over one school year and results are reported simultaneously. The study included a computer-based instructional component which was used to provide feedback to the student as well as monitor their progress. The dependent measures were reading fluency and general reading ability. Reading fluency was measured using a formula named the Rate of Good Reading (RGR) score which is calculated using number of correct words read, difficulty of passage being read, total number of words in passage and the time taken to read the passage. The time taken to read the passage has a greater impact on the student's RGR score. Therefore, fluency was measured based on improvements to the warm-up passages give to every student. The warm-up passages were given to the student at the beginning of every session and the authors labeled this the Posttest RGR score. The warm-up passages were always the same. The general reading ability was measured using the Pretest RGR score which was measured by examining the improvements on RGR score on the selected passage over the term of the phase. The Pretest RGR score was based on passages never read by the student. A second form of data collection was utilized to measure fluency and general reading ability. The Gates-MacGinitie reading test was administered, which measure speed and accuracy, vocabulary and comprehension.

Results indicate that gains were achieved in fluency for most of the students, but effects were mixed for the group on the general reading ability scores. These findings support previous research linking repeated reading to fluency gains. The authors speculate that general reading ability could be improved using repeated reading if it is used while the student is in the beginning phase of reading, which they state is between grade four and six reading ability, as opposed to the advanced phase, which they state is approximately grade five reading ability. They reason that once a student reaches the advanced phase the students are reading to learn and repeated reading of the same text would not increase a student's knowledge. Repeated reading is suggested as a means to progress students out of the beginning phase and into the advanced phase of reading.

Another study examining the effectiveness of repeated reading on fluency was conducted by Devault and Joseph (2004). The authors combined a phonics technique with repeated readings in the attempt to increase the reading fluency of three high-school students with severe reading delays. The students' initial reading levels ranged from beginning first grade to middle third grade. All participants received special education services and their intelligence quotients were 94, 94 and 57. Reading fluency was measured by the number of words read correctly per one minute (WCPM) on passages at or above the reading level of the participants.

In this study, a word box is a rectangular shaped white board with sections drawn on it that corresponds to the number of sounds in the word the student is currently learning. This technique has been shown to improve phonemic awareness, word identification and spelling skills in elementary students, but has not been studied with high-school students.

Results indicated that all students benefited from the combination of word boxes and repeated reading. Reading fluency was recorded at baseline with students obtaining scores of 36, 62 and 52 WCPM. Upon completion of intervention phase the student increased their scores to 74, 96 and 81 WCPM. Participant one was introduced to reading passages above his reading ability (3<sup>rd</sup> grade) and increased his fluency from 39 to 79 WCPM. Participant two was introduced to reading passages above his reading ability (4<sup>th</sup> grade) and increased his fluency from 58 to 104 WCPM. Participant three was also introduced to reading passages above her reading ability (4<sup>th</sup> grade) and increased her fluency from 45 to 88 WCPM. The three participants increased their average words read correctly per minute scores by 33, 33 and 31 WCPM from baseline to intervention phase.

These finding would indicate the combination of word boxes and repeated readings is an effective strategy to improve the reading fluency of high-school students that exhibit reading difficulties. One implication of the findings is the effectiveness of this combination of techniques that have been primarily reserved for early elementary students with reading difficulties. Educators of older students that exhibit reading difficulties have another strategy in trying to improve the students reading abilities.

Valleley and Shriver (2003) conducted a multiple baseline across participants study to determine the effects of a repeated readings intervention on the fluency and comprehension of four high-school males served in a residential facility. Participants were chosen if they had reading rates thirty to fifty words correct per minute (WCPM) less than a comparison group and had of less than eighty-five. The comparison group was four males from the same facility that were nominated as exhibiting average reading

ability and had Total Reading standard scores on the Woodcock Reading Mastery Test-Revised between ninety and one hundred and ten.

The authors used passages that were at the fourth grade level to measure reading fluency and comprehension. Fluency was defined as the correct number of words read in one minute. Three comprehension measures were utilized. The first was from generalized questions from the general curriculum. The second came from multiple-choice questions from the passages themselves and the last measure came from modified cloze readings created from the passages.

The participants began by reading three passages each week during the initial phase to determine baseline data on fluency and comprehension. The participant was allowed to continue to the next passage when he demonstrated at least one more correct word read per minute over three consecutive readings. If the participant did not accomplish this after ten readings he was allowed to continue to the next passage. The participants were given cloze readings once a week to measure comprehension scores. A reinforcement schedule was also employed with the participants due to behaviors that would interfere with the procedures. One participant had to have his schedule altered (immediate rewards as opposed to delayed) for exhibiting behaviors that were disrupting the intervention phase.

Results illustrate the effectiveness of repeated readings on fluency. All participants improved their fluency on fourth and fifth grade passages with the exception of one student on the fourth grade passages. The participants range of WCPM score was 70 to 106 during baseline and ranged from 85 to 107 during intervention phase. On fifth grade passages the three participants WCPM scores ranged from 64 to 92 and during

intervention phase ranged from 97 to 107 words read correctly per minute. The pre and posttest scores on ninth grade passages indicate an average improvement of 13.3 WCPM while the comparison group averaged an increase of 3 words per minute. On the general curriculum questions the treatment group improved by increasing an average of 11.67 WCPM after intervention was introduced while the comparison group averaged seven fewer words read correctly. Results for comprehension were mixed for the participants with some showing slight improvements on some measures and some actually showing declines. For example, based on the pre and posttest of the Woodcock Reading Mastery Test-Revised one participant's standard score remained the same while two participants' scores actually dropped by a combined three standard score points. Overall, the study suggests that repeated readings can improve fluency when implemented for even a short amount of time. In the case of this study, the participants were only exposed to an additional ten hours of repeated reading.

Table 3

*High-School Studies Reviewed on Reading Fluency.*

<b>Citation</b>	<b>Question</b>	<b>Participants</b>	<b>Procedure</b>	<b>Measures</b>	<b>Results</b>
Carver, R.P. & Hoffman, J.V. (1981)	Evaluate the effectiveness of repeated reading using a computer program to provide feedback on student's general reading ability	Two identical studies were conducted using six high-school students in each	Group design	Reading fluency and general reading ability as measured by the Gates-MacGinitie reading test	Repeated reading improved fluency and had mixed effects on general reading ability
Devault, R. & Joseph, L.M. (2004)	To examine the effectiveness of repeated reading coupled with word boxes on the fluency of three high-school students with severe reading difficulties	Three high-school students with severe reading delays	Multiple probe design	Number of words read correctly per minute using grade level reading passages	All participants increased reading fluency with the combination of repeated reading and word boxes
Valleley, R.J. & Shriver, M.D. (2003)	Examine the effectiveness of repeated readings on fluency and comprehension of four secondary students	Four high-school students educated in a residential treatment facility	Multiple baseline across participants	Correct words read per minute and number of correct questions answered on passages	All participants made gains in fluency and mixed results on comprehension measures

## Heterogeneous Grade Level Studies on Reading Fluency

The following is a review of the literature on studies that examined the reading fluency of participants that were in multiple grades. Herman (1985) conducted a study using eight fourth, fifth and sixth grade students that examined the effects of repeated readings had on the speed, accuracy and speech pauses of students determined to be in the lowest percentile of readers using a standardized reading measure for the area the study took place. Approximately one hundred and sixty passages were used in the study. A reading grade score (RGS) was obtained from the Total Reading Score of the Woodcock Reading Mastery Tests. Upon appropriate selection of passages the student was told to read any story in the text. The student continued with this passage until eighty-five words per minute was achieved. Each student averaged four trials before reaching mastery.

Reading rate was calculated using a tape recording device and analyzed by the author two separate times for accuracy. A computer program measures speech pauses. The computer counted any pause in speech between 166 and 2,666 milliseconds. A tape recorder was utilized for miscues in reading the passage.

Results indicate that students improved their reading speed within passages and between passages. The average words read correctly for the initial reading of the first story was forty-seven words per minute while the initial words read correctly on the initial reading of the fifth story was sixty-nine words per minute. This signifies that the participants' improvements were carried over after completion of each passage. Speech pauses were reduced significantly, but only within each passage. The reduction did not carry over to subsequent passages. Total miscues significantly dropped within, but not

between passages. Participants committed 17% miscues on the initial reading of their first passage and this dropped to 6.5% upon completion of their first passage. Upon initial reading of passage five the participants committed 11% miscues which dropped to 7% upon completion of passage five. This indicates that practice can improve reading accuracy within a particular passage, but perhaps not have a carry over effect to future passages. This study demonstrated that repeated readings can enhance reading rate and accuracy for students that exhibit reading difficulties.

Therrien, Wickstrom & Jones (2006) conducted a study with twenty-nine students in the fourth, fifth, seventh and eighth grades to determine the effect of reading achievement when using an intervention that combined repeated readings with question generation. Of the twenty-nine students sixteen were diagnosed with a learning disability in reading and thirteen were considered at-risk by their teachers. For a student to be at-risk the student had to have been reading at least two grade levels below their current grade. The students were randomly assigned to either a control group (N=14) or a treatment group (N=15).

The authors used the Reread-Adapt and Answer-Comprehend (RAAC) supplemental program. The RAAC is designed to integrate both repeated readings and question generation into one intervention. Treatment began by the teacher cuing the student to read a passage as quickly as they could without making errors. The teacher then pointed to a cue card with a generic question pertaining to the story on it. The students were told they would have to answer the question after they complete the story. The student reread the passage aloud at least two times, but no more than four times. Upon completion of the rereading the teacher assisted the student to answer the question

on the cue card orally. If the student could not give the correct response after teacher assistance the student was given the correct answer and shown where the answer could be found in the passage. These procedures were repeated until the criteria for continuing with a new passage was met.

The authors used correct number of words read per minute (WCPM) and number of factual and inferential questions answered correctly as the dependent measures. The authors administered two pre and posttests to examine the dependent measures. Reading fluency was measured using the dynamic indicators of basic early literacy skills (DIBELS) oral reading fluency and reading achievement was measured using Broad Reading scale of the Woodcock-Johnson Achievement Test-III (WJ-III). Words read correct per minute scores and the number of correct questions answered was taken after each rereading of the passages. All students in the treatment group read fifty passages over the term of the study.

Results for the within sessions measures indicate the treatment group increased their instructional grade level of passages read by 2.07 grade levels. Student in the treatment group took 2.4 attempts on average to reach mastery criteria on a passage and also increase their WCPM score by 22.16 words. While the number of factual questions answered correctly remained constant after intervention the number of inferential questions answered correctly increased from 90.25% correct before intervention to 97.25% correct after intervention. On the pretest and posttest measures results demonstrate the treatment group made greater gains on both the oral reading test and reading achievement scale. The control group increased their reading fluency by 2.28 WCPM while the treatment group increased by 13.0 WCPM. On the reading achievement

scale the control group increased their standard score from 83.0 to 86.0 while the treatment group increased from 80.4 to 86.6 on their standard scores. Both were found to be statistically significant at the .05 level.

The results of this study point out the efficacy of the RAAC supplemental program to increase fluency as well as general reading achievement. Not only did within sessions measures increase, but the increase carried over to the posttest scores. The program was also shown to be effective with students identified with a learning disability in reading as well as those at-risk students. The authors point to three possible explanations for the success of the RAAC program in obtaining generalized improvements in reading when other studies have not shown such success. First, the length of the intervention was four months which is considerably longer when compared to other studies. Secondly, a performance criterion was used to determine when the student could progress to the next passage as opposed to a fixed number of readings. Lastly, the difficulty of the passages were systematically adjusted up or down in accordance with the student's ability. Other studies have used the same reading level of the passages for the entire intervention phase. Overall, the program appears to improve reading fluency and comprehension in students that exhibit reading difficulties.

Table 4

*Heterogeneous Grade Level Studies Reviewed on Reading Fluency.*

<b>Citation</b>	<b>Question</b>	<b>Participants</b>	<b>Procedure</b>	<b>Measures</b>	<b>Results</b>
Herman, P. (1985)	Study the effects repeated reading has on the speed, pauses and accuracy of students exhibiting reading difficulties	Eight students in fourth, fifth and sixth grade	Time X Treatment within-participants	Correct words read per minute, number of speech pauses during reading and accuracy of the reading	Participants increased reading speed and reduced number of miscues that carried over between passages. Speech pauses were reduced within each passage, but did not carry over to different passages
Therrien, W.J., Wickstrom, K. & Jones, K. (2006)	Examine the effects of a combination of repeated readings and question generation had on reading achievement with students diagnosed with a learning disability or at-risk for reading failure	Thirty students in fourth, fifth, seventh and eighth grade. Sixteen students were diagnosed with LD in reading and fourteen were at-risk for failure	Pre-posttest group design	Correct number of words read per minute and number of factual and inferential questions answered correctly	All participants in the treatment group made significant improvements in reading fluency and comprehension

## Response to Intervention, Learning Disability and the Diverse Student Population

One of the most recent debates in the field of learning disabilities (LD) pertains to the process used to diagnose students with the disability (Gerber, 2005; Holdnack & Weiss, 2006; Marston, Muyskens, Lau, & Canter, 2003; Mastropieri & Scruggs, 2005; Vaughn & Fuchs, 2003). Since the learning disability category was established in 1977 the number of students identified has increased over 200% (Bradley, Danielson & Doolittle, 2005; Vaughn, Linan-Thompson & Hickman, 2003). Some speculated that using the intelligence quotient (IQ)/achievement discrepancy model was classifying many students with a learning disability who were actually problem learners (Wong, 1996). The IQ/achievement discrepancy model was viewed to be reactionary with a “wait to fail” response to school problems as opposed to a diagnostic tool that was proactive in identifying students with a learning disability (Fuchs, Mock, Morgan, & Young, 2003; Mellard, 2004; Baskette, Ulmer & Bender, 2006).

In 2004 President Bush signed into law the Individuals with Disabilities Education Improvement Act (IDEIA, 2004). This improved act allowed students to be identified based on the response to intervention (RTI) model. Response to intervention has been operationalized numerous times in the literature (Marston, 2005; Fuchs & Fuchs, 2006; Graner, Faggella-Luby & Fritschmann, 2005). Response to intervention is a multi-tiered problem-solving model in which evidence-based instruction is presented to the entire class. This is generally considered tier one. Those students that are nonresponsive to this evidenced-based instruction are provided with a supplementary intervention either in the general education classroom or in a separate classroom. This is normally referred to as tier two. Students that still exhibit difficulties are referred for

further evaluations and possibly a referral to special education. This is commonly labeled tier three.

One major difference between the IQ/achievement discrepancy model and the RTI model is the latter model would appear much more proactive in identifying students that are exhibiting academic and behavioral problems at an earlier age. Along with the benefit of early diagnosis the response to intervention has been touted as a means to reduce the number of misdiagnose cases of learning disability due to its inherent use of evidence-based instructional strategies provided to every student (VanDerHeyden, Witt & Barnett, 2005; Scruggs & Mastropieri, 2002; Harris-Murri, King & Rostenberg, 2006; Fletcher, Denton & Francis, 2005; Vaughn, et al, 2003; Klingner & Edwards, 2006) as well as preventing problem behaviors (Barnett, Elliott, Wolsing, Bunger, Haski, McKissick, & Vander Meer, 2006; Gresham, 2005) and academic difficulties (Justice, 2006; Fiorello, Hale, & Snyder, 2006; Davis, Lindo, & Compton, 2007; Kroeger & Kouche, 2006) from ever occurring in students.

With the introduction of RTI into the legislation as a means to identify a child with a learning disability, there is much speculation about how this will effect the population of students diagnosed with the disability (Coutinho, 1995; Bradley, Danielson, & Doolittle, 2005). It has been argued that the number of students diagnosed with a learning disability will decrease due to the assumption that many students do not receive adequate instruction and therefore are not really learning disabled. Another factor considered in the implementation of a response to intervention model was the claim that there is little difference in students identified as learning disabled and students considered slow learners (Fletcher, Shaywitz, Shankweiler, Katz, Liberman, Stuebing & Francis,

1994; Foorman, Francis, & Fletcher, 1995; Stanovich & Siegel, 1994; Wong, 1996). It has yet to be determined how implementing a response to intervention model will distinguish between these two differing populations of students. It has also been argued that implementing such a model with fidelity would inadvertently diagnose students that are slow learners as learning disabled and perhaps students currently diagnosed with a learning disability would respond to intervention and thereby not receive special education services (Baskette et al., 2006).

Another crucial aspect that may be affected by the implementation of a response to intervention model is the disproportionate number of minorities being served through special education (Donovan & Cross, 2002). Not only is there a disproportionate number of minority students diagnosed with a learning disability, but there are a disproportionate number labeled as emotionally disturbed (ED) also. In fact, the categories with disproportionate minority representation are the categories whose criteria use clinical judgment to determine eligibility (National Research Council, 2002). When the criterion for a category is based on biologically verifiable conditions, such as deafness and visual impairments, no such disproportionate minority representation exists (Harry & Klingner, 2007). It has been argued that using a response to intervention model to diagnose students in these two categories could reduce the disproportionate number of minorities in both categories (Harris-Murri, King, & Rosterberg, 2006) and has also been found to be illegal through the court system (*Larry P. v Riles*, 1984).

A final consideration when implementing the RTI model is the effect it will have on the number of students diagnosed with a disability who come from a low socioeconomic status (SES). A disproportionate number of students with lower

household incomes are diagnosed with a disability (see Figure 1 & 2). It could be debated that the implementation of a pyramid of intervention model for students who have less-than-optimal home environments for learning could provide the needed support to prevent a future diagnosis of a disability.

	Percent
Living in poverty [SEELS uses the federal Orshansky index to define poverty. This is adjusted for family size, and it is computed as the estimated cash to minimally meet food needs x 3. It is based on income rather than resources and ignores many non-cash benefits (food stamps, school lunches, Medicaid, housing subsidies, educational grants, and loans). It ignores wealth (i.e., owning a farm is not counted). For SEELS, the parents of students with disabilities reported their household income in categories (e.g., \$25,001 - \$50,000) rather than a specific dollar value; thus, the poverty rates for SEELS data are estimated.]	
Students with disabilities	24
General population	16
\$15,000 or less	
Students with disabilities	20
General population	13
\$15,001 to \$25,000	
Students with disabilities	16
General population	11
\$25,001 to \$50,000	
Students with disabilities	32
General population	29
\$50,001 to \$75,000	
Students with disabilities	19
General population	23
>\$75,000	
Students with disabilities	13
General population	24
SEELS N=8,083	

Sources: Income in 1999 for households of 6- to 13-year-olds with disabilities, SEELS Parent Survey, 2002; Income in 1997 for households with children ages 6 to 17, U.S. Census, 2001. Population income data from the National Household Education Survey (NHES), 1999.

*Figure 1. Families of Students Ages 6 Through 12, by Household Income Level and by Disability Status: 2000-01*

	Percent
Living in poverty [A dichotomous variable indicating that a student's household was in poverty was constructed using parents' reports of household income and household size and federal poverty thresholds for 2000. These thresholds indicate the income level; however, NLTS2 respondents reported household income in categories (e.g., \$25,501 to \$30,000) rather than a specific dollar amount. Estimates of poverty status were calculated by assigning each household to the mean value of the category of income reported by the parent and comparing that value to the household's size to determine poverty status.]	
Students with disabilities	25
General population	20
\$15,000 or less	
Students with disabilities	19
General population	17
\$15,001 to \$25,000	
Students with disabilities	16
General population	15
\$25,001 to \$50,000	
Students with disabilities	31
General population	30
\$50,001 to \$75,000	
Students with disabilities	21
General population	18
>\$75,000	
Students with disabilities	13
General population	20
N=7,709	

Sources: NLTS2 Parent Survey. Population income data are from the National Household Education Survey (NHES), 1999.

*Figure 2. Families of Students Ages 13 Through 17, by Household Income Level and by Disability Status: 2001*

## CHAPTER 3

### METHODS

#### Experimental Design

The study took place over a ten-week period with a minimum of four sessions occurring per week. A multiple probe design (Tawney & Gast, 1984) was used to demonstrate the effects of a repeated reading intervention on the number of words read correctly per minute (WCPM) as well as the number of comprehension questions answered correctly. The multiple probe design allows for data to be collected intermittently through probes introduced during instructional sessions (Tawney et al, 1984). The primary dependent measure is the number of words read correctly per minute and the secondary dependent measure is the number of comprehension questions answered correctly. The multiple probe across participants design will be used to demonstrate a functional relationship between the independent variable, repeated readings, and the dependent variables, the number of words read correctly per minute by each participant.

#### Participants in the Study

A total of four students participated in the study. Demographic information was collected and will be presented in Table 5. Demographic information includes the participant's ethnicity, gender, current grade, student's birthday and any reading weaknesses listed in their individualized education plan (IEP). The four students were chosen based on their participation in a remedial reading class offered at their middle school. Each student's individualized education plan committee placed these students into the resource reading program based on reading deficits exhibited by the student.

Based on the students' most recent achievement tests and other pertinent evaluation information deficits in reading were cited as weaknesses for each participant. One such deficit exhibited by each student is poor reading fluency. The students participated in the reading program for approximately 50 minutes a day in addition to their regular reading class. Parental consent was obtained prior to implementing the repeated reading intervention.

Table 5.

*Demographic information on the participants in the study.*

Student Grade, gender	Age Years, Months	Disability	IQ Scores, Full Scale	Reading Comprehension Achievement Test Scores
Seventh, Male	12.6	Specific Learning Disability	Full Scale-79	Woodcock-Johnson III Grade Equivalent – 2.0 Standard Score -- 66
Seventh, Male	13.11	Specific Learning Disability	Full Scale-71	Woodcock-Johnson III Grade Equivalent – 1.5 Standard Score -- 45
Seventh, Male	14.3	Specific Learning Disability	Full Scale-98	Woodcock-Johnson III Grade Equivalent – 2.0 Standard Score -- 60
Seventh, Male	13.5	Specific Learning Disability	Full Scale-100	Woodcock-Johnson III Grade Equivalent – 2.9 Standard Score -- 76

### Setting

The study took place in the middle school of a small city school district in the northeast section of a southern state. The school population, which is approximately 1300 students, is very diverse with a majority of the students being of Hispanic decent.

Demographic information on the school is listed in Table 6. The school is a Title 1 school with approximately 75% of the student population receiving free or reduced lunch. The repeated reading program took place in a special education resource room where the students typically receive their study skills class.

The classroom itself is of normal size, but the fact that it is used as a resource room means that the teacher can have no more than eight students in the class at one time. Because the students in this particular class all exhibit reading fluency deficits they all participated in the repeated reading program. The class takes place during the period when the students would normally have their electives. Therefore, the time is based on the elective time frame which is approximately 50 minutes while an academic class is either 60 or 77 minutes depending on the student's program of choice.

Table 6.

*Demographic information of the participating school.*

Grade Level	TOTAL IN GRADE	Asian	Black	Hispanic	American Indian/Alaska Native	Multi-Racial	White	Unclassified
6	473 230 / 243	13 8 / 5	98 47 / 51	268 125 / 143	1 1 / 0	14 9 / 5	79 40 / 39	0 0 / 0
7	448 240 / 208	17 10 / 7	95 46 / 49	256 142 / 114	0 0 / 0	11 7 / 4	69 35 / 34	0 0 / 0
8	398 215 / 183	17 9 / 8	93 46 / 47	215 115 / 100	0 0 / 0	6 6 / 0	67 39 / 28	0 0 / 0
TOTAL	1319 685 / 634	47 27 / 20	286 139 / 147	739 382 / 357	1 1 / 0	31 22 / 9	215 114 / 101	0 0 / 0

The top number in each cell is the total population for that ethnic group in that grade. The bottom left number represents the number of males of that ethnic group in that grade and the bottom right number represents the females of that particular ethnic group in that grade.

## Materials and Equipment

The researcher supplied all materials to the resource teacher needed to implement the study. Materials and equipment included several passages from the oral reading fluency section of the Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Good & Kaminski, 2002), a digital timer and a data tracking sheet. These items were found to be necessary to effectively implement a repeated reading program (Therrien & Kubina, 2006). The reading passages were slightly above the reading level of the student in the study which was determined from the pre-assessment comprehension scores of the students. Due to the low reading level of the students the passages were below the grade level of each student. Each passage consisted of approximately two hundred words and was progressively more difficult than the previous passage.

In addition to the dependent measure, an assessment of reading comprehension was taken during the study using five questions per passage that are created by the resource teacher and primary researcher. The questions demonstrated knowledge of the main idea of the passage as well as key aspects of the story. The questions were divided into literal questions and inferential questions. A question was considered a literal question when the answer could be retrieved directly from the passage. A question was considered inferential when the participant had to deduce an answer from the passage, but the answer was not directly in the passage. There were approximately four literal questions to every one inferential question per passage. Inferential questions did not accompany every passage. A sample reading selection and the comprehension questions that accompany that selection are presented in appendix 1.

## General Procedures

### Overview

The study lasted ten weeks with a minimum of four sessions taking place per week. Due to the participants' being enrolled in the class prior to the study the location and time of day remained consistent throughout the study. An initial assessment of reading comprehension took place with all the participants prior to the beginning of the study. The study commenced with five consecutive initial probe days for all participants followed by the first phase of the intervention session for participant one. Once an upward trend was established for participant one during the first intervention phase a second probe with words per minute and comprehension data collected was completed with all participants. A second intervention phase utilizing the same procedures as the first phase proceeded for participant two. Once an upward trend was established with participant two a third probe for all participants was conducted with words per minute and comprehension data collected. These procedures continued until each of the four participants completed his intervention phase and exhibited an upward trend during the intervention phase. Data was collected on the fourth participant during probe sessions, but due to the participant moving out of the district prior to beginning the intervention phase data was not collected for the repeated reading intervention. Once this upward trend was established for all participants maintenance began for an additional three probes.

### Initial Probe Procedures

Once the students' reading levels were determined based on the passage comprehension section of the Woodcock-Johnson Achievement Test III form A (WJ-III;

Woodcock, McGrew & Mather, 2001a) the study commenced by collecting the probe data for five consecutive sessions on each participant by measuring the dependent variable. The grade equivalency on reading comprehension from the WJ-III was calculated to determine the reading ability of each student. Next, several reading passages were presented to the students that were slightly above their reading ability. The reading passages came from the oral reading fluency section of the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). Data was collected on the words read correctly per minute and comprehension questions for the student's reading passages to which he had not been previously exposed. The term 'cold reading' will be used to designate the fact that the students have not been previously exposed to the reading passage.

Each participant was given a passage to read for their cold reading. Data was collected on words read correctly per minute and the number of comprehension questions answered correctly on these cold readings for a minimum of five consecutive sessions. There was no corrective feedback given during any initial probe sessions. Comprehension questions were presented to each participant immediately upon completion of the cold reading of the passage. Once data was generated for all four participants on words read correctly per minute and the number of comprehension questions answered correctly for a minimum of five sessions the repeated reading intervention phase began for the first participant. During the subsequent period, the other three participants performed their typical reading related activities other than repeated reading.

#### Intervention and Measurement Procedures

The intervention sessions comprised of the student reading a passage for a minimum of four times during the session with fluency data being collected during the

cold reading of the session. The first time a participant is exposed to a passage it is considered a cold reading. Data was calculated on each dependent variable during the cold readings. Corrective feedback was given only after the initial cold reading, and after the participant had completed the comprehension measure for that reading.

After that cold reading is completed, the participant was exposed to the reading passage for a second time, but this time, the resource teacher began to provide corrective feedback which included word identification for unknown words in the passage and other comprehension feedback. Thus, the second reading entailed the participant reading the passage while the teacher corrects misread words and points out key aspects in the passage that the participants did not recognize during the cold reading. The third reading was in the form of the participant sub-vocalizing the passage in its entirety without receiving corrective feedback from the resource teacher. The fourth reading was a replication of the cold reading, in which the teacher did not provide feedback, but calculated the number of words read correctly per minute. This is referred to as a 'hot reading' since the child has previously been exposed to the same story several times. Also, after the hot reading the same comprehension questions were again presented to the participant upon completion. The teacher and participant then compared the student's scores on both dependent measures for that particular story selection, with the teacher pointing out that both the participant's fluency and comprehension have increased when it was the case.

The primary dependent measure was the number of correct words read per minute (WCPM) on cold readings. For this study incorrect words were defined as words that are stated incorrectly, omitted, miscued, or not stated within three seconds. When a word was

read incorrectly by the student during the intervention sessions the teacher correctly read the word for the student and then had the student read the word correctly before continuing with the reading.

A secondary dependent measure was the number of questions answered correctly for the passage comprehension questions for each passage on cold readings. These questions were created by the resource teacher for each passage read by the participant. They included questions on the main ideas of the passage, the key concepts inferred and factual information contained in the passage.

### Reliability

Inter-rater reliability data was collected throughout the study with the resource teacher serving as the primary observer and the experimenter serving as the secondary observer. Data was collected on inter-rater reliability a minimum of 20% of the sessions. The number of words read correctly divided by the number of words read correctly plus the number of words read incorrectly was used to compute the coefficient of inter-rater reliability. The experimenter and the resource teacher calculated the number of correct words read per minute and compared their findings. The discrepancies were examined and discussed to determine what is considered an incorrect word read and what is considered a correct word read. If reliability did not reach 90% then training would have ensued to ensure that both experimenter and teacher agree to what is considered a correct word read and an incorrect word. This did not occur during the course of the study.

Reliability on the scoring of the comprehension measure was also calculated for a minimum of 20% of those assessments. This took place by having both the resource

teacher and lead researcher grade 20% of those assessments and calculating a percentage of agreement, as described above.

The outcome of treatment was determined by examining the graph of the number of words read correctly per minute from the pre-probe passages to the number of words read correctly per minute from the cold readings over time and across participants. A functional relationship was established between the dependent and independent variables when the number of words read correctly per minute increases to a noticeable degree. In the case of this study the increase of the number of words read correctly by each participant was noticeable after the introduction of the repeated reading intervention.

#### Internal Validity

The multiple probe design allows for experimental control to be demonstrated between the dependent and independent variables by conducting a visual inspection of the data when graphed. A change in level over three participants at three different times in the study demonstrated the effectiveness of a repeated reading program on reading fluency in the study. This established a functional relationship between repeated reading and reading fluency.

#### External Validity

External validity was demonstrated due to the significant difference between pre and post-probe scores. Since this is a replication of previous studies then the external validity was established by the evidence that repeated readings did in fact improve the reading fluency as well as the comprehension of the participants in this study.

#### Social Validity

To ensure the intervention was not only effective, but also easy to implement and useful in enhancing the student's reading skill, a three question survey was conducted with the resource teacher. The survey questions examined the ease as well as the perceived effectiveness of the repeated reading program based on a 10-point Likert scale. This measured the perceived ease of implementation in conducting a repeated reading program for the resource teacher as well as the effectiveness of the program for students who exhibit difficulties in reading. A copy of the survey is presented in appendix 2.

### Data Analysis

Data analysis consisted of a visual inspection of the graph of the data from pre-intervention phase to post-intervention phase. A change in level across participants indicated a functional relationship between the repeated reading program and the fluency of the participants in the study. A visual inspection of the graph for the number of comprehension questions answered correctly also indicated an increase in comprehension of the passages read by the participants. Also, the percent of non-overlapping data points (PND) was calculated as an indication of the degree of change in level the intervention had on the participants. The percent of non-overlapping data points was calculated by dividing the number of data points that lie above the range of data points in phase I by the total number of data points in phase II. This number was multiplied by 100 and presented as a percentage.

## CHAPTER 4

### RESULTS

#### Introduction

This chapter presents the results of the study. The purpose of this study was to determine the effectiveness of a repeated reading intervention on the reading skills of students that exhibit reading difficulties. Four middle-school students participated in the study. Words read correctly per minute and the percent of comprehension questions answered correctly were the dependent measures. The comprehension questions were divided into literal and inferential questions with literal questions outnumbering inferential questions on average of four to one.

#### Research Questions

1. If a passage of approximately 200 words slightly above the reading ability level of a student is read repeatedly will the student increase the number of words read correctly per minute over a 10 week period?
2. If a passage of approximately 200 words slightly above the reading ability level of a student is read repeatedly will the student increase comprehension of the passage over a 10 week period?
3. Will the strategy of repeated reading effectively increase the reading fluency and improve passage comprehension with a group of students that are culturally and economically diverse?

#### Analysis of Research Results

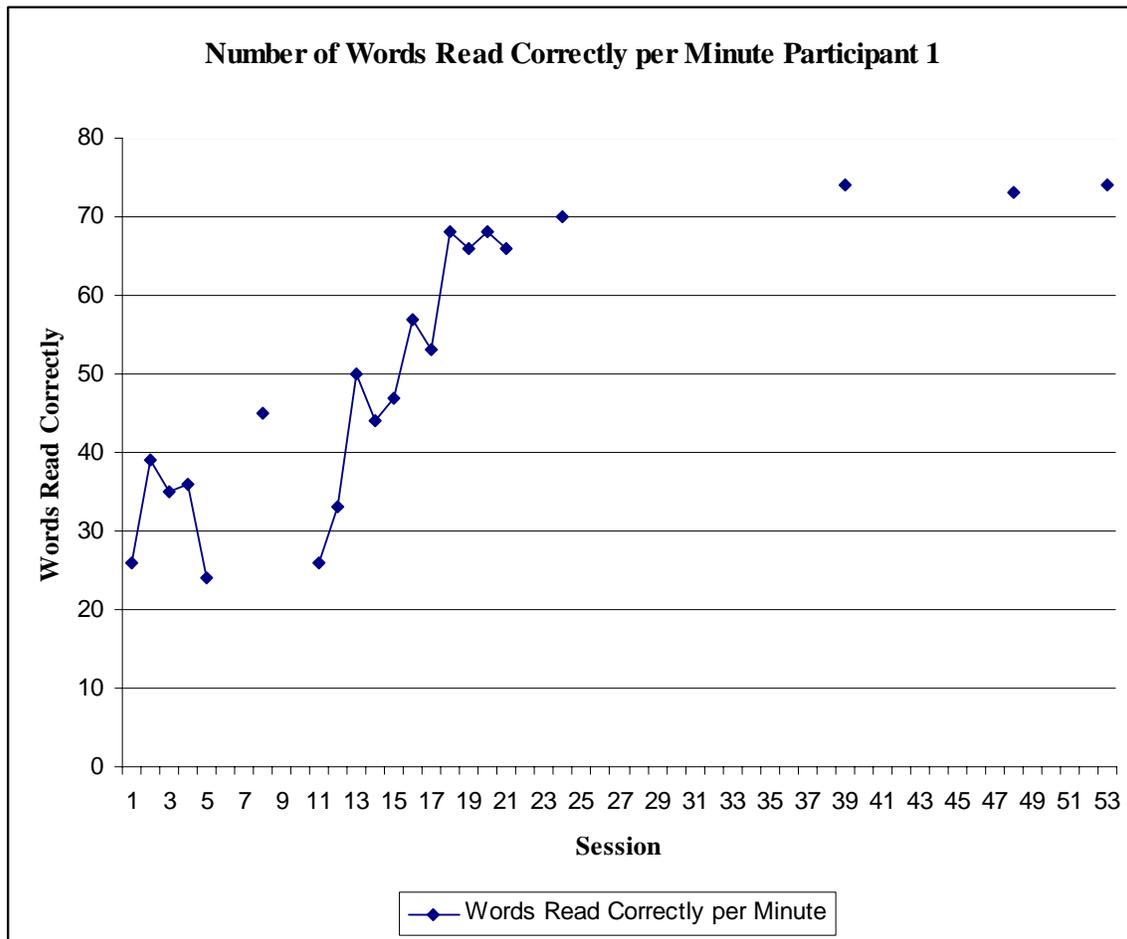
A visual analysis of the data reveals the repeated reading intervention effectively increased the number of words read correctly per minute in all participants. The repeated

reading intervention improved the passage comprehension in all participants as well. Graphing the data demonstrates a functional relationship between the intervention and the number of words read correctly per minute. Graphing the data also demonstrates a functional relationship between the intervention and the percent of comprehension questions answered correctly. Another interesting aspect that arose from the findings was the fact that a functional relationship exists between the intervention and the number of miscues read by the participants.

#### Words Read Correctly per Minute

Participant one's number of words read correctly per minute increased from an average of slightly more than 32 WCPM prior to being exposed to intervention to slightly more than 57 WCPM after the intervention was administered. This was an average of just more than 25 more words read correctly per minute after implementation of the intervention. When analyzing the last seven sessions with participant one the increase is just more than 70 WCPM. This is an indication that participant one was continuing to improve fluency at the end of the study.

The percent of non-overlapping data points (PND) for participant one was 87.5%. This indicates that almost eighty-eight percent of the data points in phase II of the study were higher than the data points prior to implementation of the repeated reading intervention. This indicates a significant change in level for participant one after being exposed to the intervention.

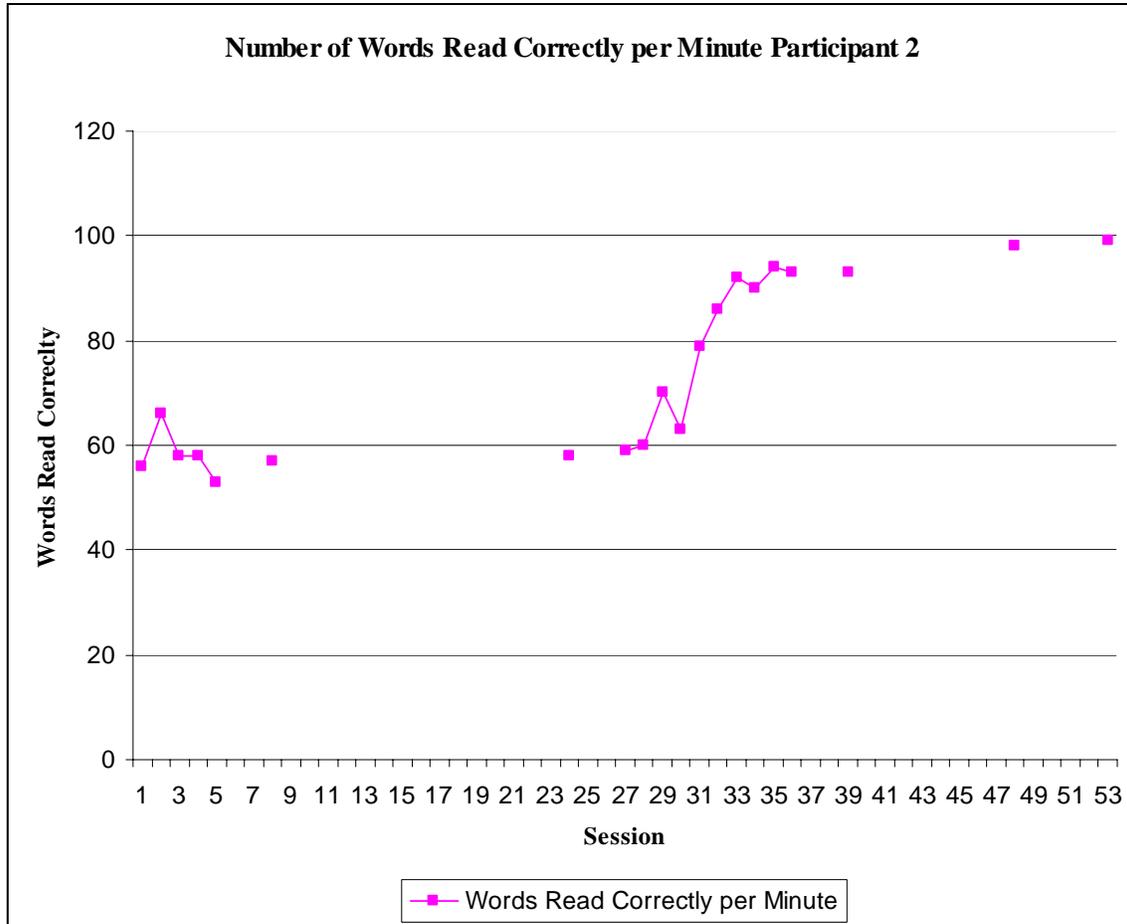


*Figure 3. Participant 1 Words Read Correctly*

Participant two increased from an average of 58 WCPM prior to being exposed to the intervention to 81 WCPM after being exposed to the intervention. This is an average of 23 more words read correctly per minute after being exposed to the intervention. When analyzing the final seven sessions the average increase is slightly more than 94 WCPM. This is an indication that participant two was continuing to increase the number of words read correctly per minute at the end of the study.

The percent of non-overlapping data points (PND) for participant two was 71.43%. This illustrates that over seventy-one percent of the data points were higher in

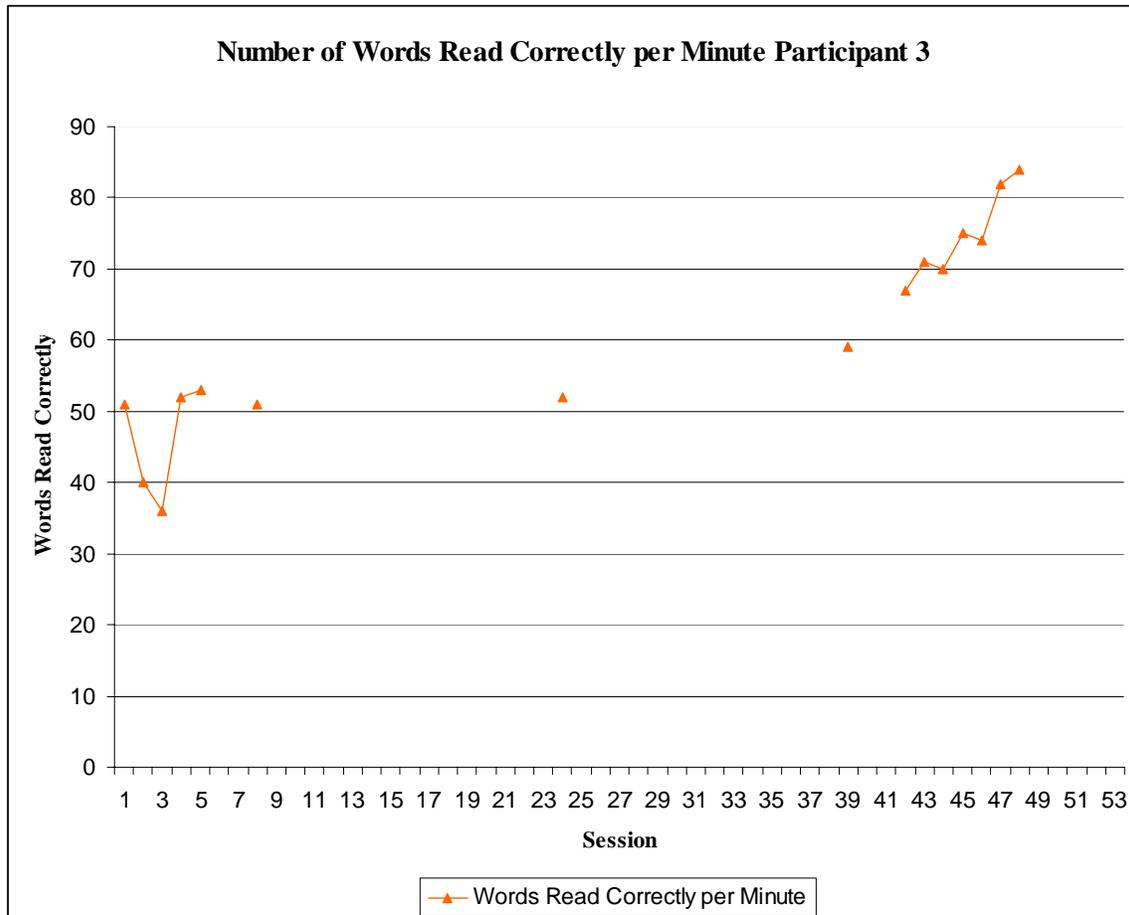
phase II of the study than in phase I. This is a significant change in level for participant two after being exposed to the intervention.



*Figure 4. Participant 2 Words Read Correctly*

Participant three increased from slightly less than 48 WCPM prior to being exposed to the intervention to just less than 73 WCPM after implementation of the intervention. This is an average increase of slightly more than 24 more words read correctly per minute after intervention was implemented. When analyzing the last seven session participant three increased to an average of slightly less than 75 WCPM. This is also an indication that participant 3 was continuing to increase the number of words read correctly per minute at the end of the study.

Interestingly, the percent of non-overlapping data points (PND) for participant 3 was 100%. This indicates that every data point during the intervention phase of the study was higher than the data points prior to the implementation of the intervention. This is a clear indication of a significant level change for participant three.



*Figure 5. Participant 3 Words Read Correctly*

For participant four only data prior to implementation of the repeated reading intervention is available. Participant four moved out of the district before the repeated reading intervention could be implemented. However, participant four displays level data points during probe sessions which is an indication that his reading fluency was stable prior to phase II of the study.

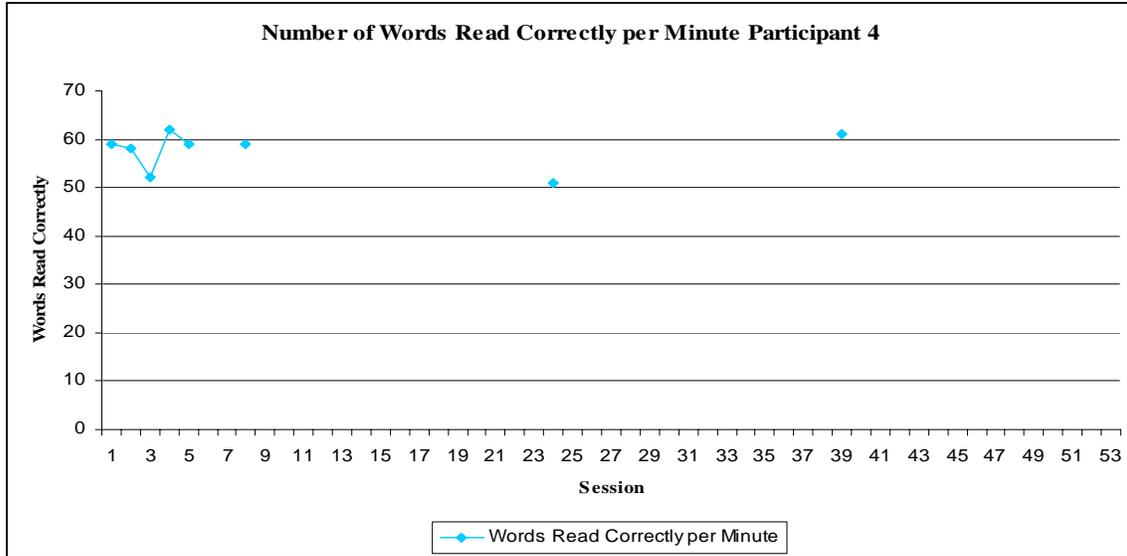


Figure 6. Participant 4 Words Read Correctly

Analyzing the graph of all four participants a function relationship is established with a change in level at three different points in time across three of the participants. The graph is displayed in figure 7.

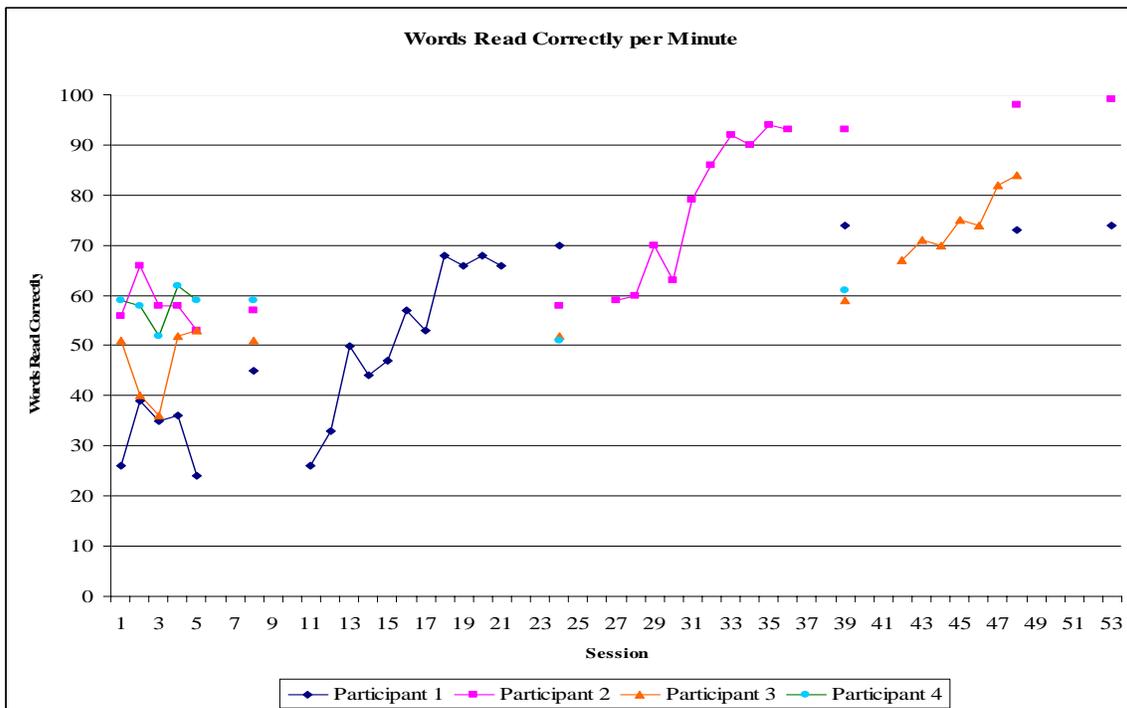


Figure 7. All Participants Words Read Correctly

### Percent Comprehension Questions Answered Correctly

Participant one improved the percent of comprehension questions answered correctly from an average score of 36 percent correct prior to intervention phase to an average score of 70 percent correct after intervention phase. Analyzing the last seven sessions of participant one indicates an average score of just less than 72 percent correct. This constitutes a one hundred percent improvement from phase I to phase II of the study in reading comprehension scores for participant one.

The PND for participant one on comprehension questions answered correctly was slightly more than 38%. This indicates that slightly more than thirty-eight percent of the data points in phase II of the study were higher than the data points in phase I. During phase I of the study the student scored considerably higher on the second set of questions than any of the other set or questions. Not including this data point would increase the PND for participant one to 84.62%. However, there is no indication that this score is an outlier, so it will remain in the data set.

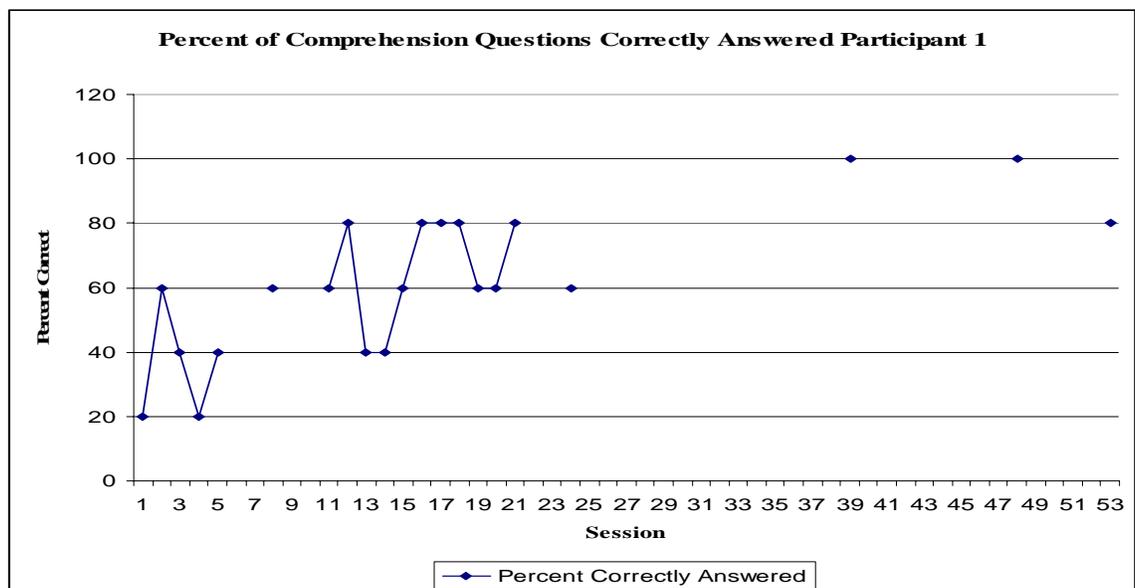


Figure 8. Participant 1 Percent Comprehension Questions Answered Correctly

Participant two improved the percent of questions answered correctly from just less than 47 percent correct prior to intervention to 60 percent correct after the intervention phase. Analyzing the last seven sessions indicates an improvement to just more than 74 percent correct. This is an indication that participant two was continuing to improve comprehension up to the end of the study.

The PND for participant two is calculated at 0%. Participant two also scored considerably higher on the second set of comprehension questions than on other sets of questions. With the median comprehension score for participant two during phase I of the study being 40 and the third quartile score being 55 a score of 80 is considerably outside the upper limits. Also, the mean score for participant two during phase I was 46.67 and the standard deviation was 20.66. A score of 80 falls 1.61 standard deviations above the mean. Not including that data point would increase the PND for participant two to 46.86. Since the data point does not meet the typical standard to be considered an outlier the data point will be included.

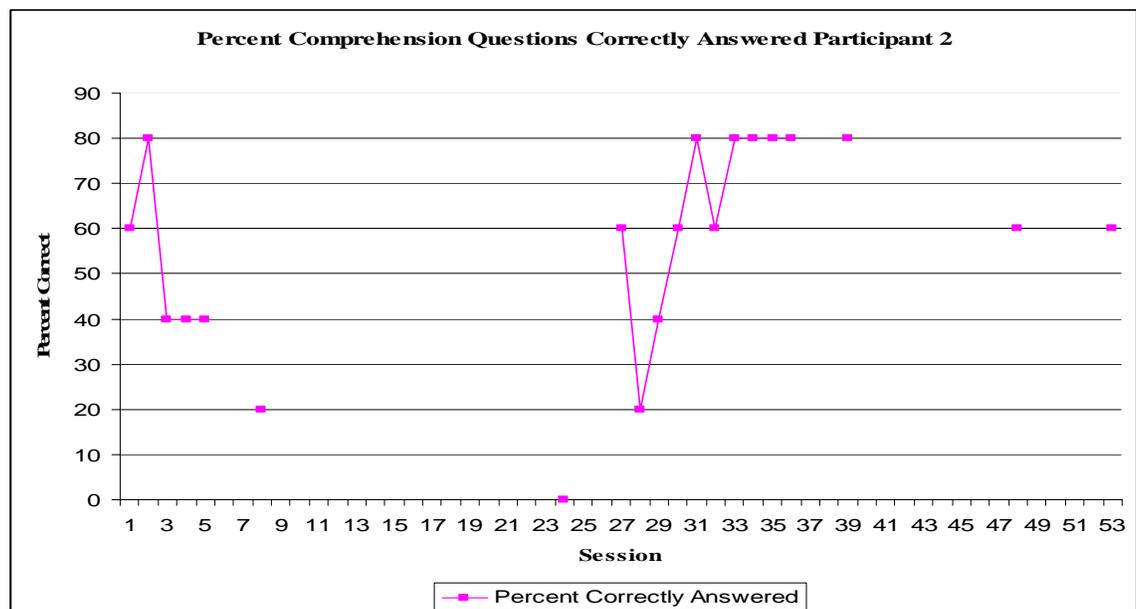


Figure 9. Participant 2 Percent Comprehension Questions Answered Correctly

Participant three improved the percent of questions answered correctly from just less than 26 percent correct prior to intervention to 57.5 percent correct after be exposed to the repeated reading intervention. When analyzing the last seven session participant three increased to an average of 60 percent questions answered correctly. This is an indication that participant three was continuing to improve comprehension scores up to the end of the study.

The PND for participant three was 62.5 %. This indicates that more than sixty-two percent of the data points for participant three were higher in phase II than in phase I. This is an indication that there was an increase in level for participant three on reading comprehension scores after being exposed to the repeated reading intervention.

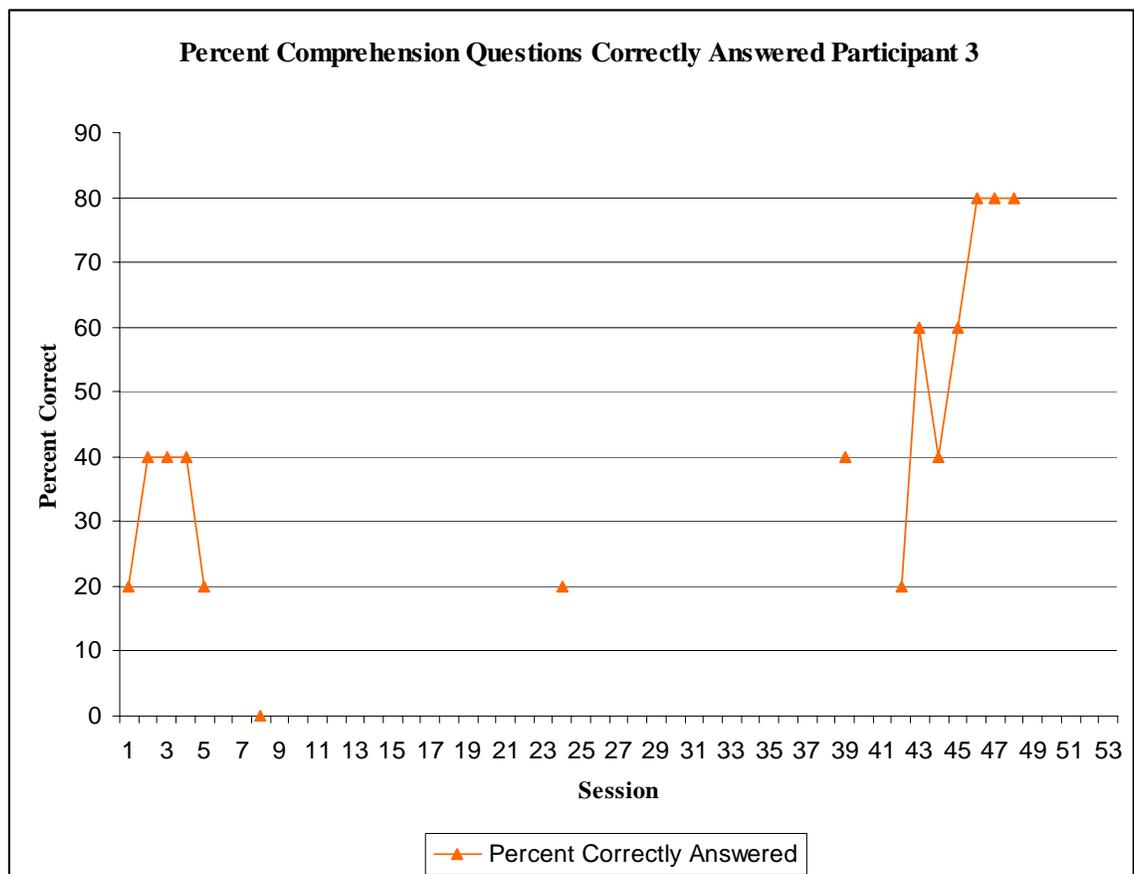
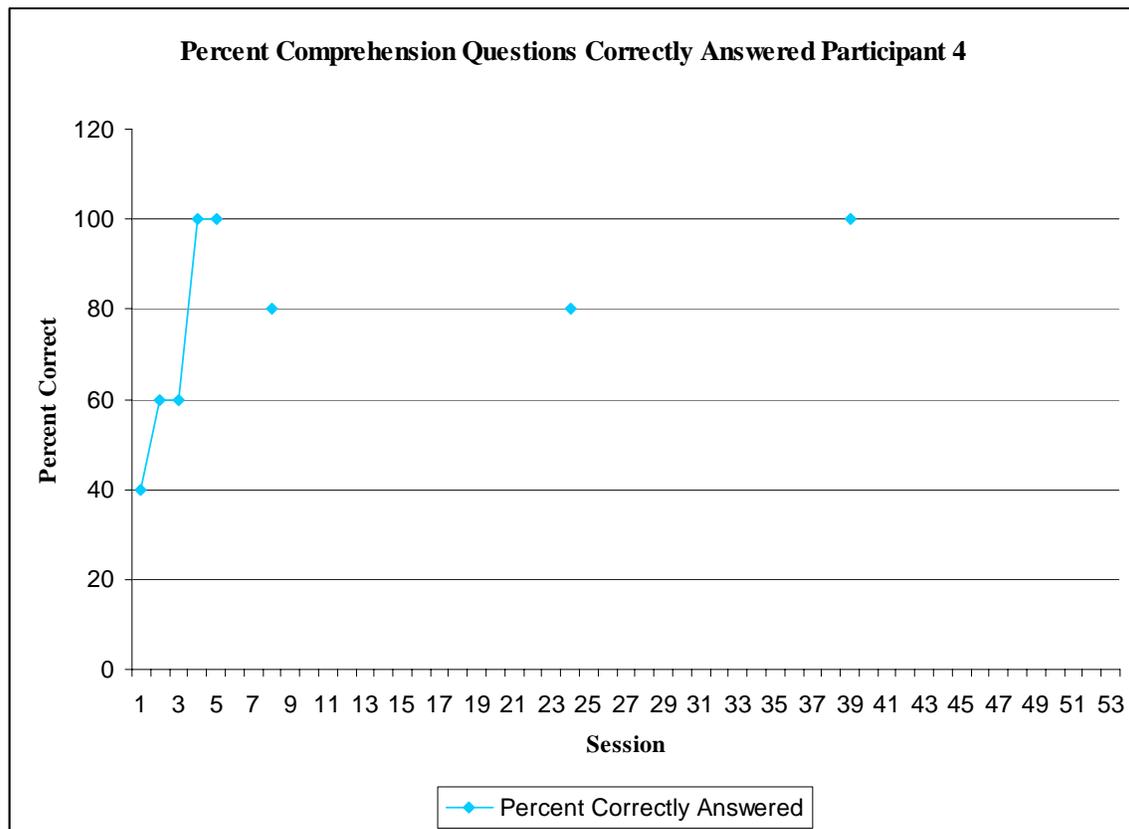


Figure 10. Participant 3 Percent Comprehension Questions Answered Correctly

Participant four did not finish the study, but pre-intervention data were collected. Participant four displayed relatively high scores on the percent of questions answered correctly. This is not surprising considering this participant did not exhibit reading comprehension difficulties according to the student's individualized education program (IEP). It would have been interesting to observe if the reading comprehension scores for participant four would have remained high throughout the study.



*Figure 11. Participant 4 Percent Comprehension Questions Answered Correctly*

A functional relationship was also established between repeated reading and the percent of comprehension questions answered correctly by conducting a visual examination of the graph of all four participants. A change in level at three separate times across three participants is observed.

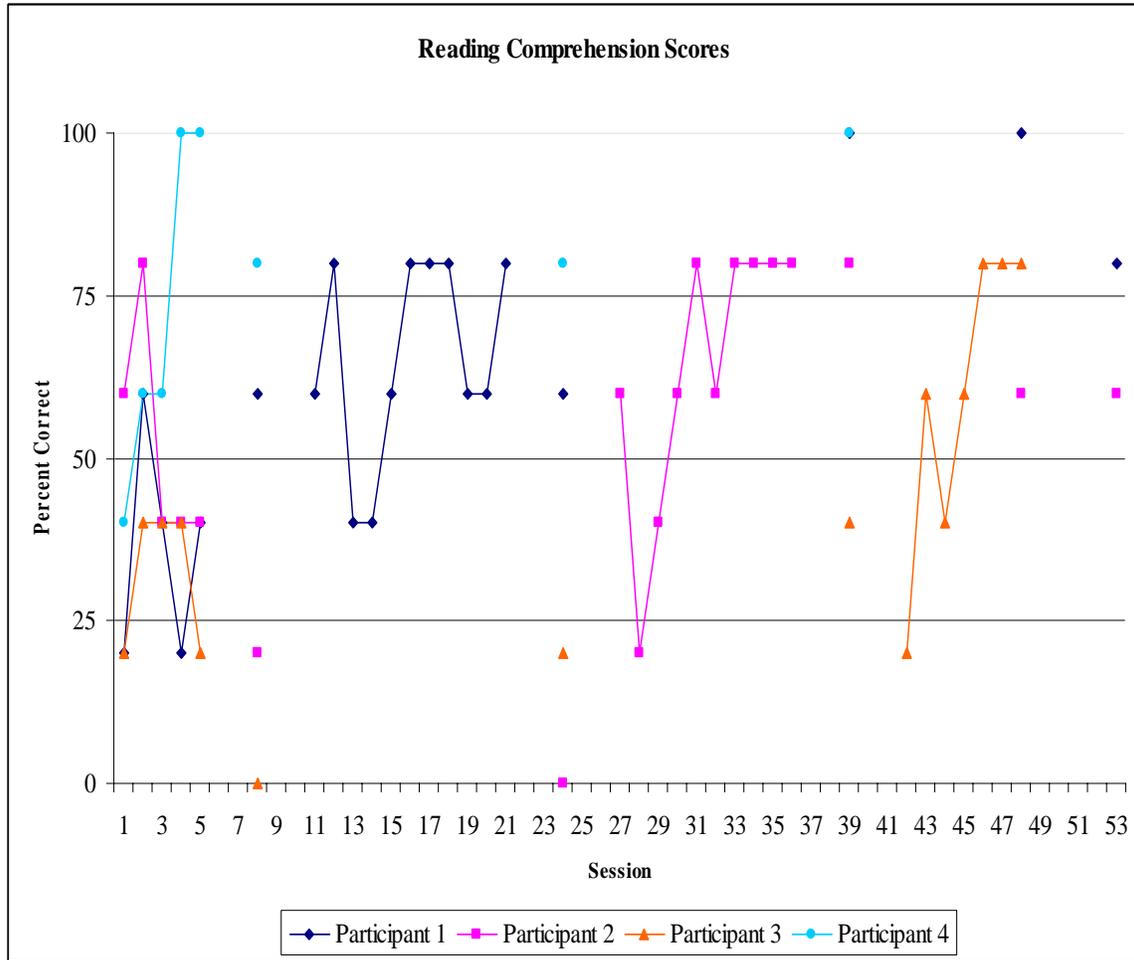


Figure 12. All Percent Comprehension Questions Answered Correctly

#### Number of Miscues

For the purpose of this study incorrect words were defined as words that are stated incorrectly, omitted, miscued, or not stated within three seconds. When a participant stated a word incorrectly it was documented and recorded as a miscue. Repeated reading has been shown to not only increase the number of words read correctly, but also reduces the number of words participants will read incorrectly. For this study data was collected and reported as the number of miscues per minute. This coincides with the number of words read correctly per minute.

Participant one reduced the number of miscues per minute from an average of 12.6 prior to intervention to an average of 3.56 miscues per minute after being exposed to the intervention. This is an average of slightly more than 9 fewer miscues per minute once the intervention was implemented. When analyzing the last 7 session for participant one the average number of miscues is slightly more than 3 words per minute.

The PND for the number of miscues for participant one is 100%. This indicates that the participant never made more miscues once the intervention was implemented than the lowest number of miscues prior to intervention. This is a clear indication that the repeated reading intervention effectively decreased the number of miscues per minute made by participant one.

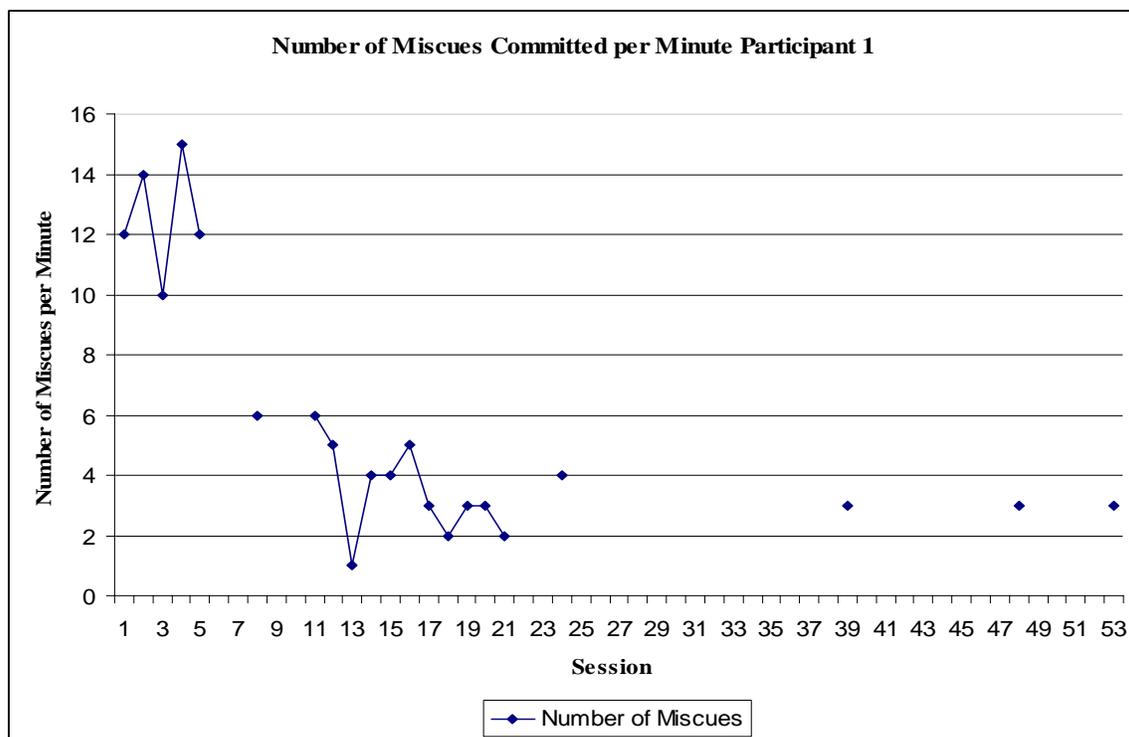


Figure 13. Participant 1 Number of Miscues Committed Per Minute

Participant two reduced the number of miscues from just more than 19 miscues per minute prior to intervention to 7.8 miscues after the intervention phase. This is a

reduction of just more than 11 miscues per minute after implementation of the repeated reading intervention. Examining the last 7 data points reveals a further reduction in miscues per minute to 4.86. This indicates that participant two was improving his word recognition up to the conclusion of the study.

The PND for the number of miscues per minute for participant two was 85.71%. This indicates that over eighty-five percent of the data points in phase II were lower than the lowest data point in phase I. This is a clear indication that the repeated reading intervention reduced the number of miscues per minute with participant two.

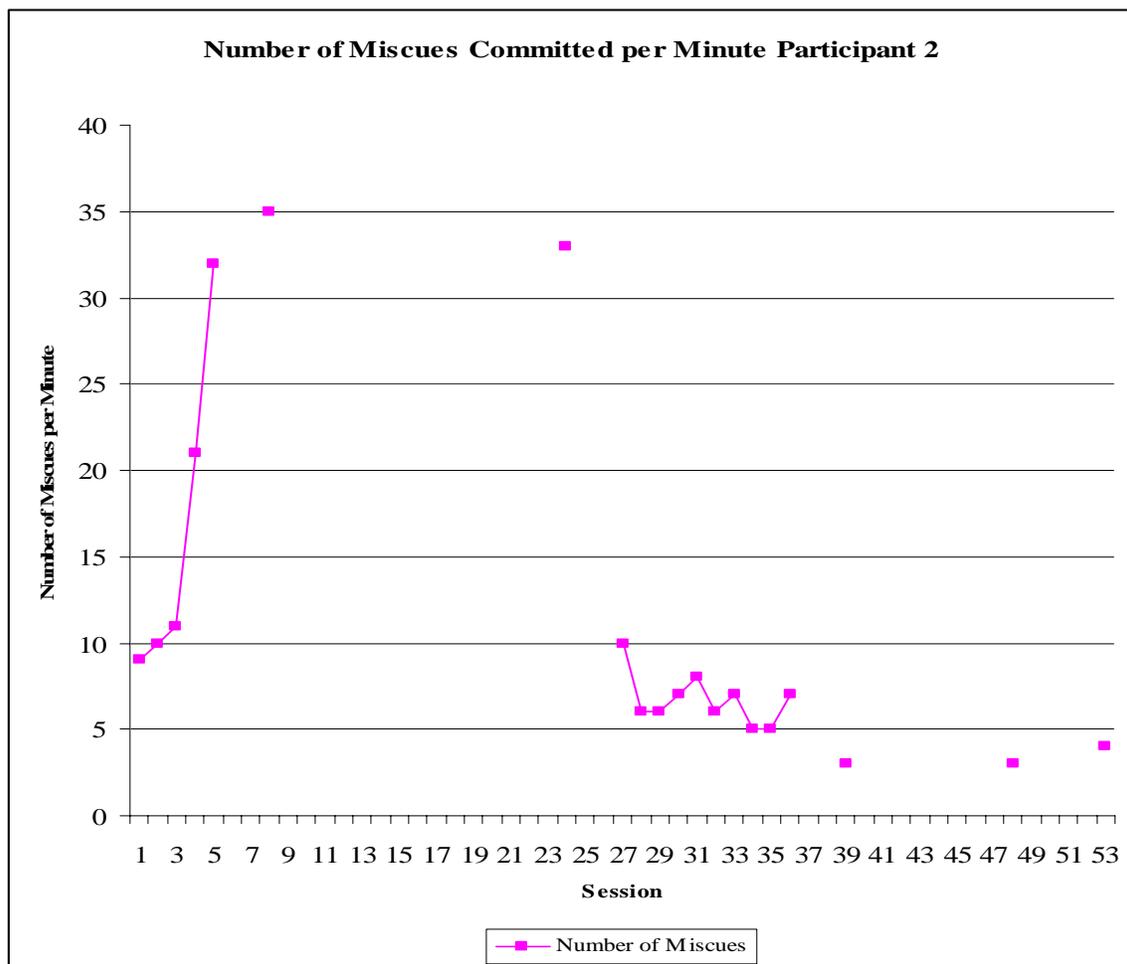


Figure 14. Participant 2 Number of Miscues Committed Per Minute

Participant three reduced the number of miscues per minute from an average of 15 miscues per minute before the intervention phase to 6 miscues per minute after implementing the repeated reading intervention. This is nine fewer miscues per minute once the intervention was implemented. Examining the last 7 data points reveals the number of miscues per minute reduces even further to 5.14. This indicates the participant was continuing to improve his word recognition up to the conclusion of the study.

The PND for the number of miscues for participant three was 87.5%. This reveals that more than eighty-seven of the data points were higher than the lowest data point once the repeated reading intervention was implemented. This demonstrates a significant decrease in the number of miscues per minute made by participant three once the intervention was implemented.

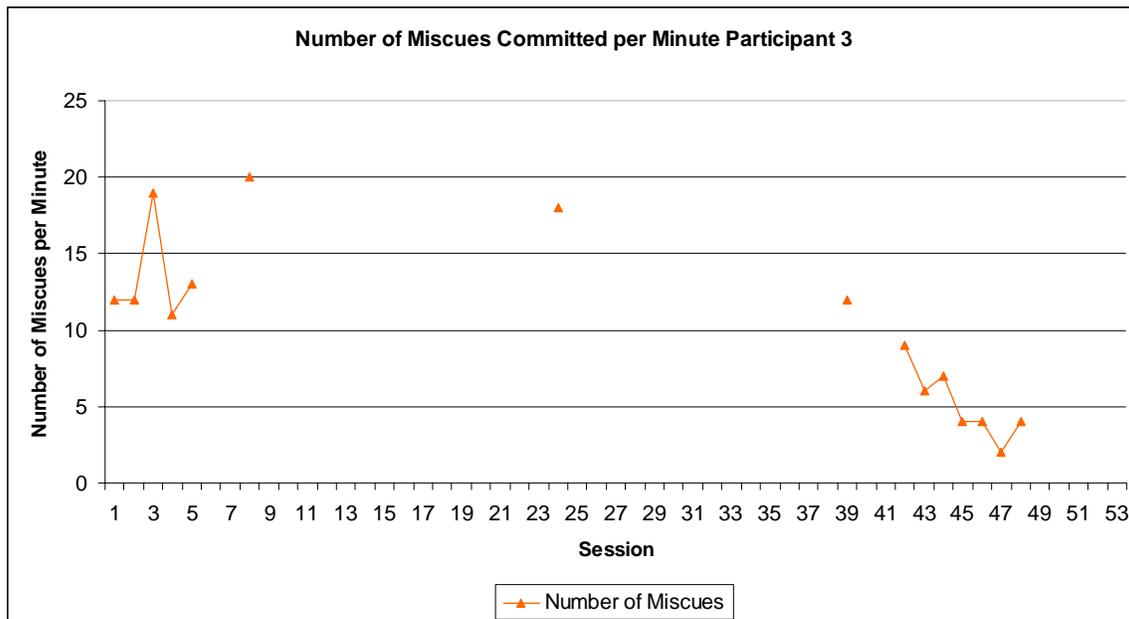
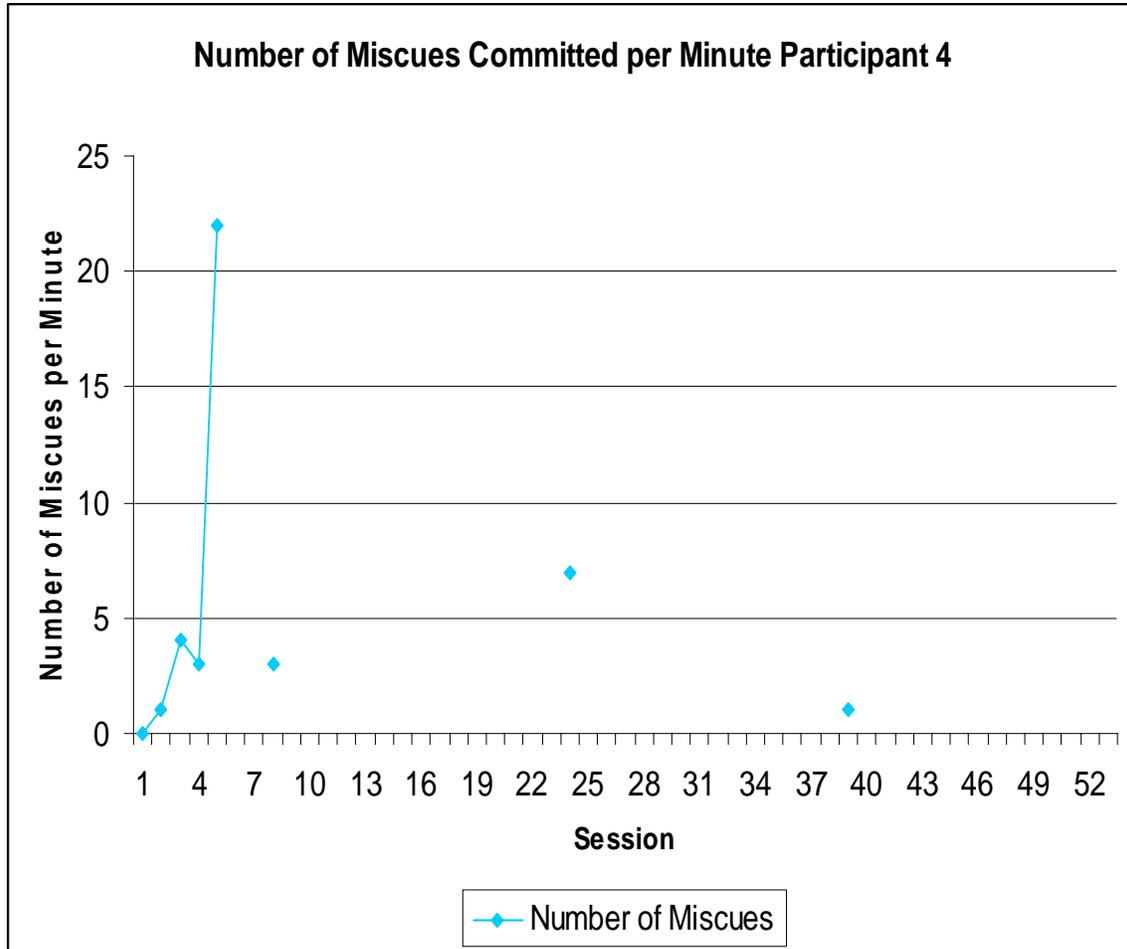


Figure 15. Participant 3 Number of Miscues Committed Per Minute

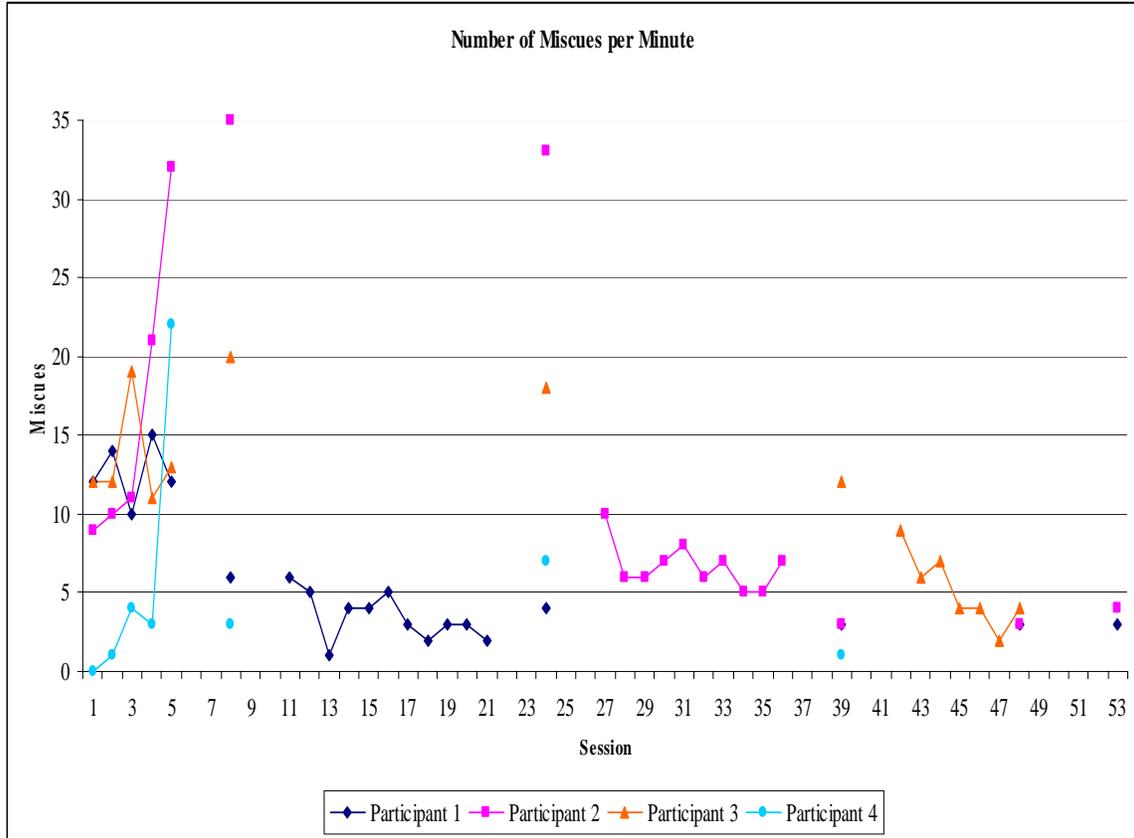
Participant four was unable to complete the study due to the fact the family moved out of the school district. In analyzing the data participant four did not vary as

much as the other participant in the number of miscues per minute. Participant four was consistently low in the number of miscues per minute with the exception of session five.



*Figure 16. Participant 4 Number of Miscues Committed Per Minute*

A functional relationship was also established between the repeated reading intervention and the number of miscues committed per minute. A visual analysis of the graph indicates a change in level at three separate times across three participants during the study. Figure 17 displays the graph.



*Figure 17. All Number of Miscues Committed Per Minute*

#### Relationship between Number of Words Read Correctly and Number of Miscues

One aspect that makes a repeated reading intervention so effective is it not only increases the reading speed of participants, but it also improved the word recognitions of participants at the same time. Each participant that took part in the repeated reading intervention increased their reading fluency as well as improved their word recognition based on the decrease in the number of miscues committed. The follow figures display this information.

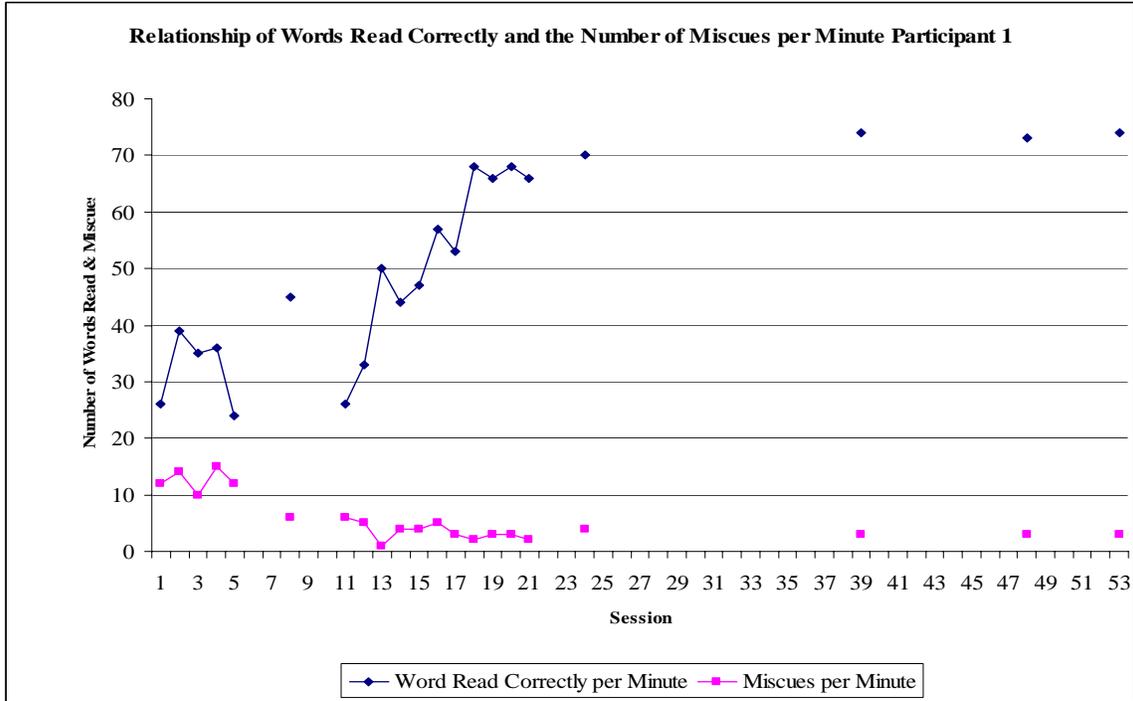


Figure 18. Participant 1 Relationship Words Read and Miscues Committed

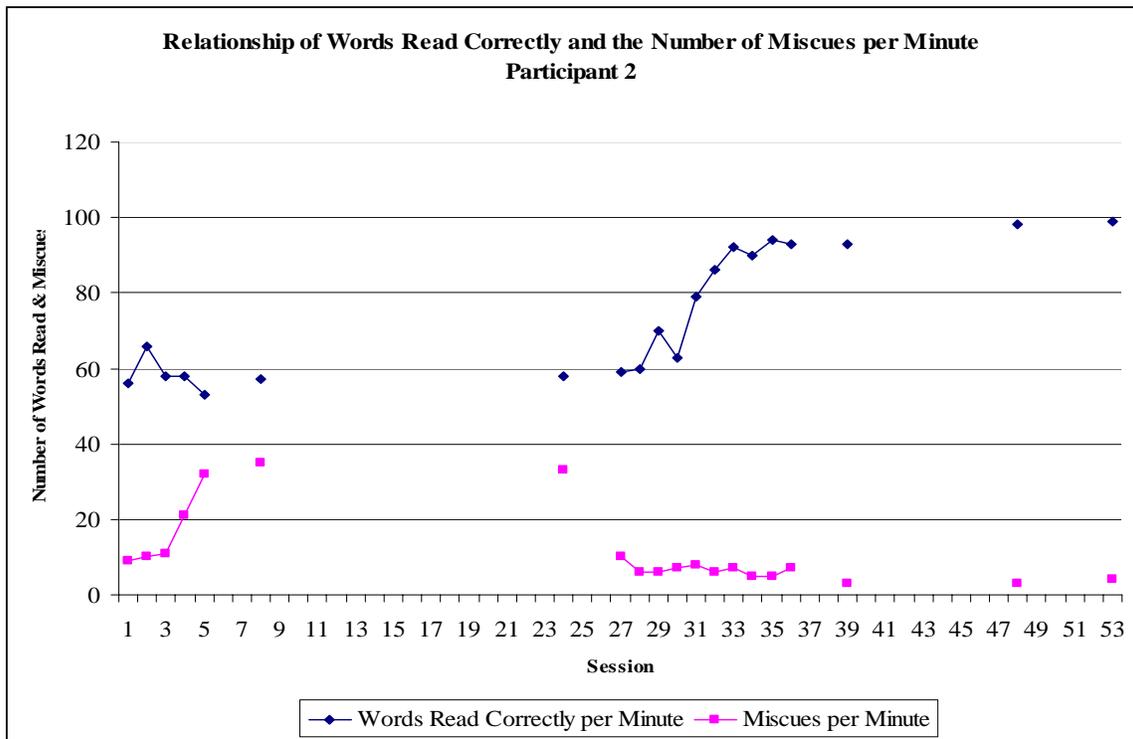


Figure 19. Participant 2 Relationship Words Read and Miscues Committed

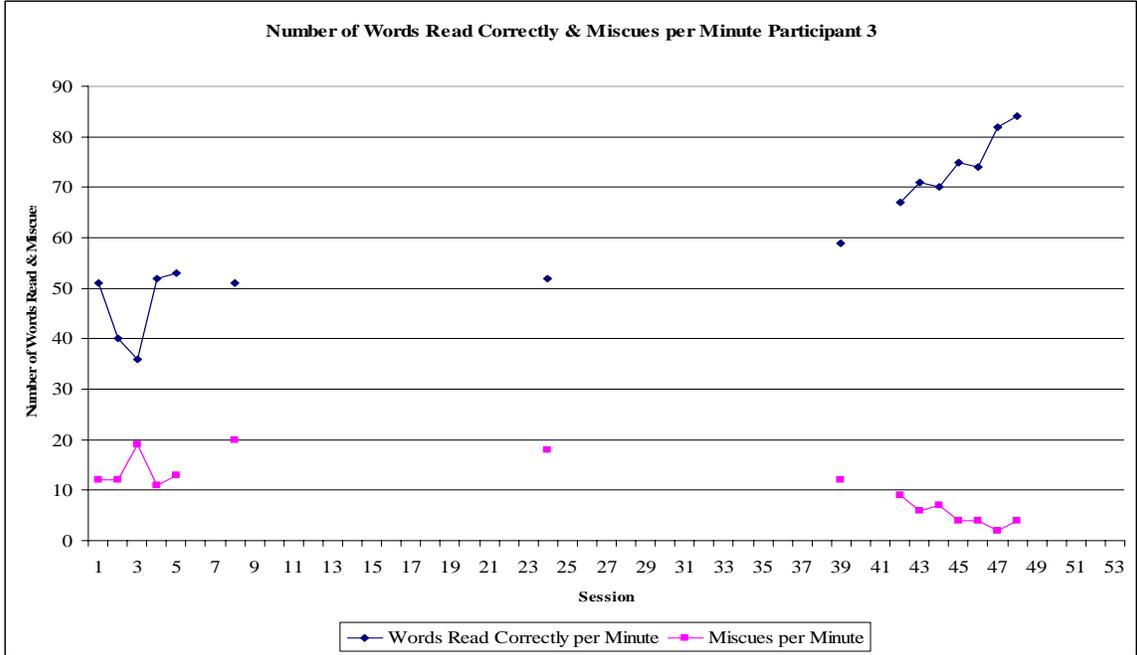


Figure 20. Participant 3 Relationship Words Read and Miscues Committed

### Inter-rater Reliability

Data collected on inter-rater reliability shows agreement on 97% of observations. Observation took place for 33% of the sessions over the course of the study. Observations took place with every participant at least one time with more observation taking place with those that participated in more sessions. The range of percent of agreement was from 93% with participant one to 100% with participant four.

### Social Validity

The three question social validity questionnaire indicated that the repeated reading intervention was not only effective in increasing the words read correctly per minute and improving the comprehension skills in students that exhibit reading difficulties, but it was also easy to implement. The questionnaire also indicated that is would be an intervention the resource teacher plans on implementing in the future to improve reading skills of students.

## CHAPTER 5

### DISCUSSION

#### Introduction

The following chapter provides a summary of the study along with summative and evaluative details regarding the data. Limitations of the study are discussed. The results are examined as well as implications of the findings for the classroom. Finally, suggestions for future research are provided.

The study was designed to determine the efficacy of a repeated reading intervention on the reading fluency with a population that is culturally and economically diverse. The study was also designed to determine the efficacy of a repeated reading intervention on the reading comprehension with a population that is culturally and economically diverse. The data revealed that the intervention was effective in increasing the number of words read correctly per minute with all participants as well as improving the comprehension of the passages by all participants. Implications of the results will be further analyzed in the following sections.

#### Research Questions

The study was designed to determine the effectiveness of a repeated reading intervention on increasing the reading fluency and improving the reading comprehension of students that are culturally and economically diverse. The study was designed to answer the following three research questions:

1. If a passage of approximately 200 words slightly above the reading level of a student is read repeatedly will the student increase the number of words read correctly per minute over a 10 week period?

2. If a passage of approximately 200 words slightly above the reading level of a student is read repeatedly will the student increase comprehension of the passage over a 10 week period?
3. Will the strategy of repeated reading effectively increase the reading fluency and improve passage comprehension with a group of students that are culturally and economically diverse?

### Summary of the Results

The results indicate that the repeated reading intervention can effectively increase the number of words read correctly per minute with students that come from a diverse background both culturally and economically. The results also indicate the repeated reading intervention can effectively improve the comprehension of student from a diverse background. The subsequent pages will discuss the data that was compiled from the repeated reading intervention and the effects it had on the reading skill of the participants in this study.

### Words Correct Per Minute

A visual analysis of the data reveals the effectiveness of the repeated reading intervention on the participants in the study. Participant one went from reading on average slightly more than 32 words correctly per minute prior to intervention to just more than 57 words read correctly per minute after to intervention. Participant two went from reading 58 words correctly per minute to reading 81 words per minute after being exposed to the intervention. Participant three went from reading 49 words correctly per minute to reading more than 74 words correctly per minute after intervention phase. This is just more than twenty-four words read correctly per minute increase per participant.

Performing a visual analysis of the data reveals the increases for each participant commenced once the intervention was implemented. Data is presented in figure 21.

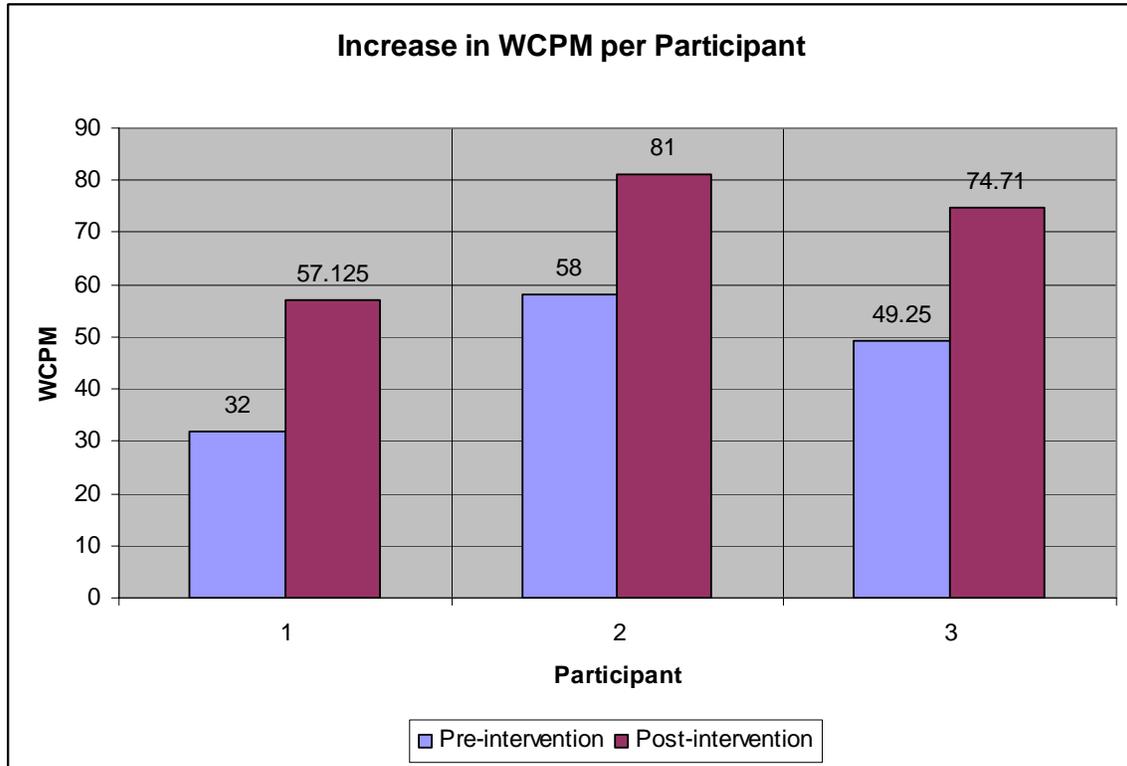


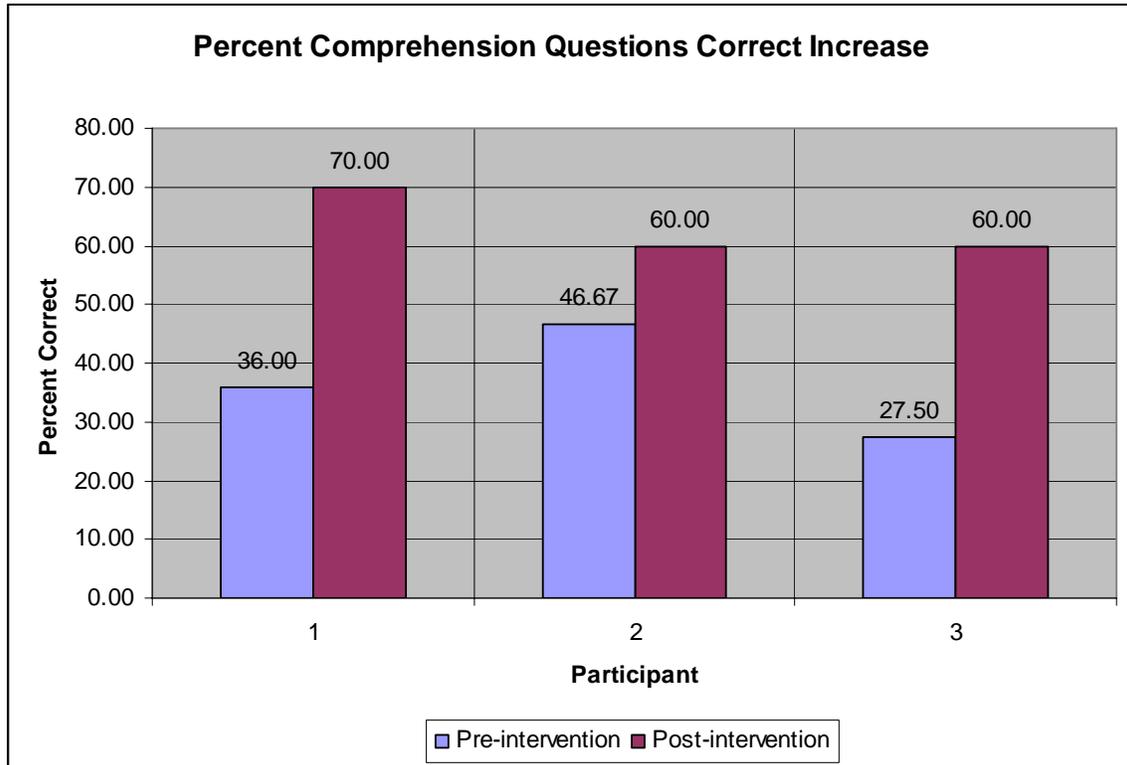
Figure 21. Increase in Words Read Correctly by Participant

### Reading Comprehension

The reading comprehension score do not appear to dramatically improve, however the scores do appear to remain more consistent after the intervention is introduced. Reading comprehension scores for participant one improved from 36 percent correct prior to intervention to 70 percent correct after the intervention was implemented. Reading comprehension scores for participant two improved from 46.67 percent correct prior to intervention phase to 60 percent correct after intervention phase. Reading comprehension scores for participant three improved from just less then 28 percent correct prior to intervention to 60 percent correct after be exposed to the repeated reading intervention.

Overall, the average score improved from 36.72 percent correct during phase I of the study to 63.3 percent correct during phase II of the study. Data will be displayed in

Figure 22.

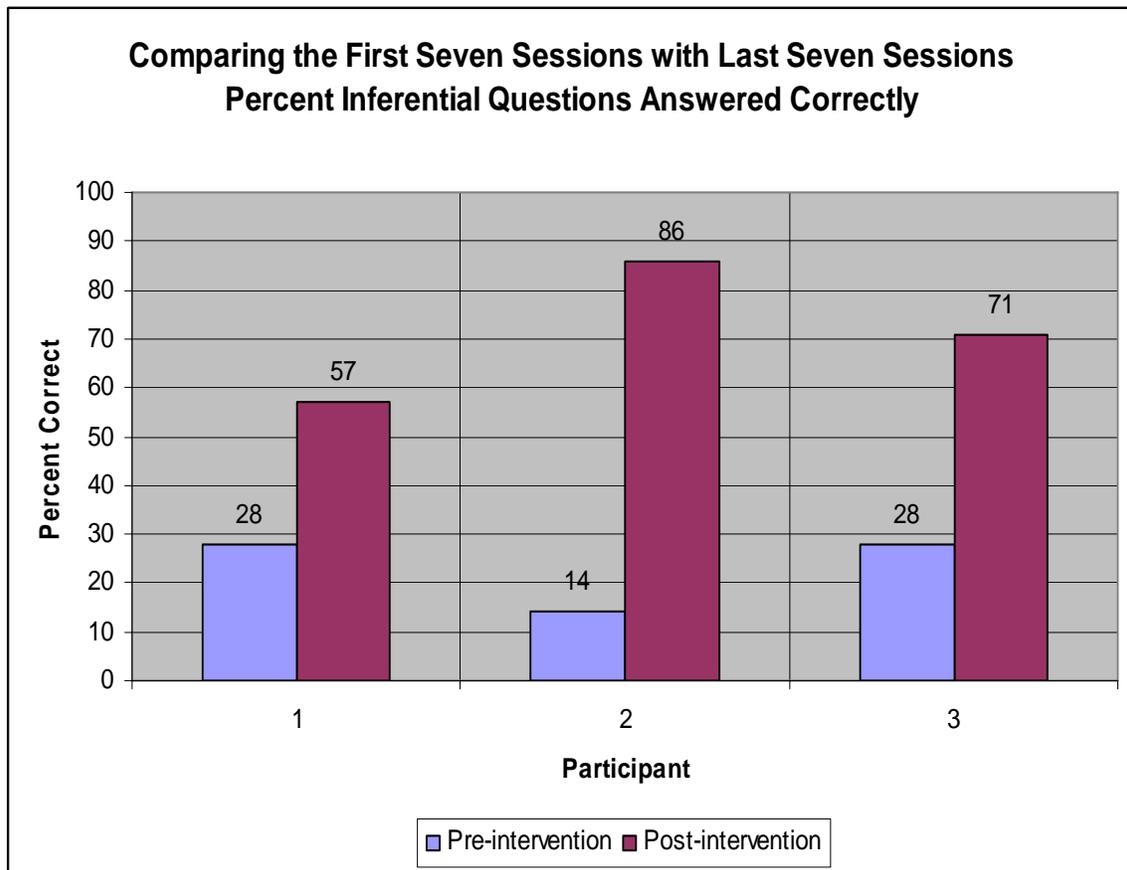


*Figure 22. Increase in Percent of Comprehension Questions Answered*

Another interestingly aspect of the reading comprehension section was the improvement in the different forms of questions from the passages. The questions were divided into literal and inferential questions. Literal questions were questions in which the answer derived directly from selections in the passage. Inferential questions were questions in which the reader must infer from the passage as to the answer. This data will be displayed in Figure 23.

Participant one scored 46% on the inferential question overall. Comparing the first seven sessions with the last seven the score improved from just more than 28% to

slightly more than 57%. This is a significant improvement in the ability to answer inferential questions from the passages. Participant two scored slightly more than 53% overall. Comparing the first seven sessions with the last seven sessions the score improves from slightly more than 14% to slightly less than 86%. This is also a significant improvement in being able to answer inferential questions correctly. Participant three scored 50% overall on being able to answer inferential questions. Comparing the first seven sessions with the last seven session the score improves from just more than 28% to just more than 71%. This is a significant increase in the percent of inferential questions answered correctly by participant three.



*Figure 23. Increase in Percent of Inferential Questions Answered Correctly*

### Miscues per Minute

One unexpected finding that came out of the study was the number of miscues made per minute by each participant. For the purpose of this study the number of miscues is operationally defined as words that are stated incorrectly, omitted, miscued, or not stated within three seconds. This data will be presented in Figure 23. Overall, the number of miscues per minute went from just less than 16 miscues per minute prior to intervention to 5.66 miscues per minute. Participant one went from 12.6 miscues per minute to 3.56 miscues per minute after being introduced to the intervention. Participant two went from 19.67 miscues per minute during phase I to 7.86 miscues per minute during phase II of the study. Participant three went from 15 miscues per minute to only 6 after the repeated reading intervention was introduced.

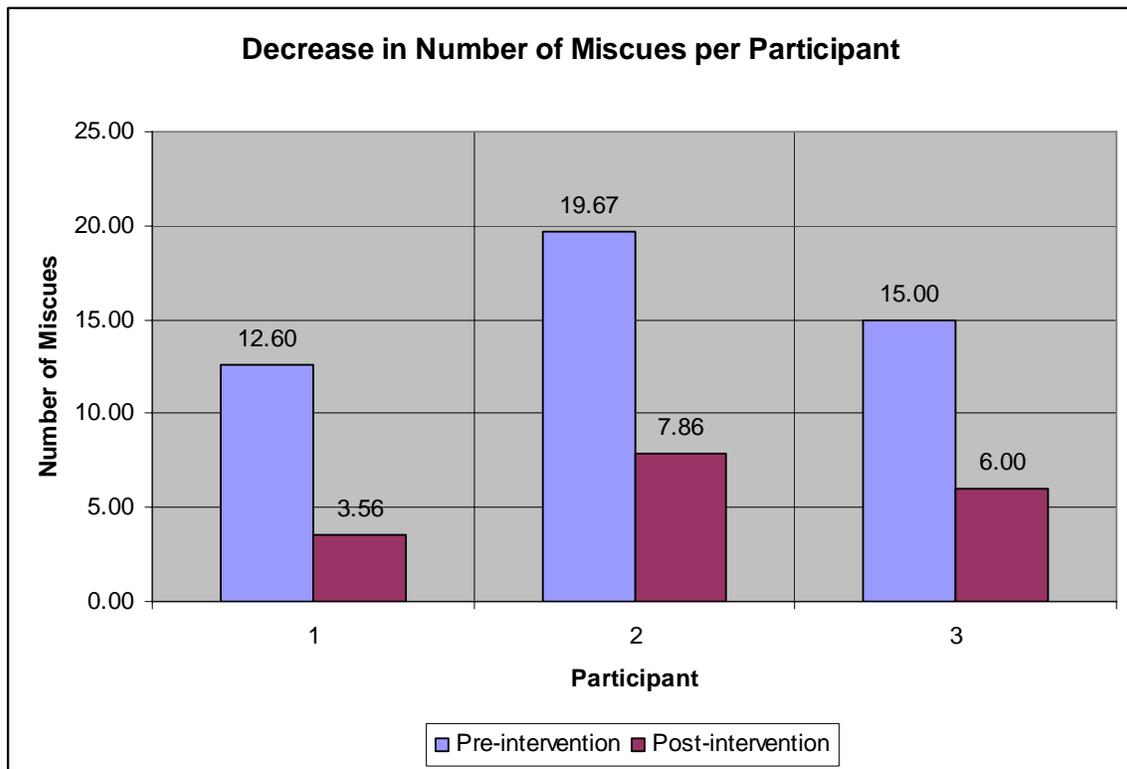


Figure 24. Decrease in Number of Miscues per Minute

## Repeated Reading and the Response to Intervention Model

Recent wording in the federal law allows the use of a response to intervention (RTI) model to diagnose students with a disability. Although there are questions as to how effective this model will be as a diagnostic tool (Baskette, Ulmer & Bender, 2006; Scruggs & Mastropieri, 2002) there have many concerns voiced in the educational literature about the use of a discrepancy model (Mastropieri, & Scruggs, 2005; Gersten, & Dimino, 2006; Fuchs, & Fuchs, 2006; Fletcher, & Foorman, 1994; Coutinho, 1995) as well as litigation against the use of intelligence tests for placement purposes (Larry P. v. Riley, 1984). One difference on implementing this model is that it mandates the use of evidence-based strategies in all classrooms prior to diagnosis of a disability. This model does not rely on the use of achievement or intelligence tests that is the catalyst for much of the controversy surrounding the current diagnostic practices. Repeated reading is a strategy that would fit into this model very well.

Although most of the research on repeated reading has been done with students that have a disability more research is needed with students that have not been diagnosed with a disability, but do exhibit reading difficulties. Repeated reading is an effective strategy that has shown to be effective with a wide range of participants with diverse reading difficulties (Nelson, Alber & Gordy, 2004; Sindelar, Monda and O'Shea, 1990; Yurick, Robinson, Cartledge, Lo and Evans, 2006; Homan, Klesius and Hite, 1993; Alber-Morgan, Ramp, Anderson, & Martin, 2007; Carver and Hoffman, 1981; Devault and Joseph, 2004; Herman, 1985). Using repeated reading with students not diagnosed with a disability would provide researchers with data about the intervention and non-disabled students. It would also offer practitioners a resource to use with students that are

at-risk for failure. This intervention would fit well in the first or second tier of a pyramid of intervention model. These tiers provide instruction to the general education population and to the population of students that are non-responsive to tier one instruction. A repeated reading intervention has been shown to not only be effective, but also easy to implement with a small group or an entire class.

### Overall Findings

The findings of this study correspond to the findings of other studies using a repeated reading intervention with elementary, middle and high-school students exhibiting reading difficulties. Begeny & Silber, (2006) also used a repeated reading intervention with four elementary students that were not diagnosed with a disability to improve reading fluency. The four participants were all no more than two grade levels behind in reading and receiving free or reduced lunch. The repeated reading intervention was combined with listening passage preview and word-list preview. Word-list preview lasted around three to four minutes and consisted of the teacher writing approximately twenty words on the chalkboard and the class chorally reading the words chosen by the teacher. Upon completion of the words as a group the teacher would call on individual students to read selected words. The listening passage preview condition consisted of the teacher reading a selected passage at approximately one hundred words per minute while the class followed along silently with their copies of the text. Using the same measurement tool as the current study the results indicated that the intervention was effective with all participants in increasing the number of words read correctly. The implementation of the intervention was considered by the teacher to be effortless.

Another study with elementary participants was conducted by Rasinski (1990) in which a repeated reading intervention was implemented to improve fluency. The study examined the effects different strategies had on the fluency of twenty third graders from different elementary schools in a community in the southeastern United States. The study utilized two one hundred word passages that were considered at a fourth grade level from a commercially produced reading inventory. A pretest was given to each group by having the student read one of the two passages and reading speed and word recognition baselines were established. Reading speed and accuracy increased to statistically significant levels using the different strategies. This would suggest that different strategies, including repeated reading, can improve the fluency of students

Alber-Morgan, Ramp, Anderson & Martin, (2007) describes similar results with the four middle-school students that exhibited reading difficulties. A repeated reading intervention was found to increase the number of words read correctly, decrease the number of miscues made by the participants and stabilize the reading comprehension scores of the students. Reading rates ranged between 38.8 to 91.6 in baseline, 95.6 to 133.7 in the repeated reading session and 117 to 154 in the repeated reading and prediction session. The number of miscues per minute was also reduced using a repeated reading intervention. During repeated reading errors per minute dropped to a range of 1.4 to 3.6. Errors also dropped again during the repeated reading and prediction to a range of 1.1 to 1.5 errors per minute.

Homan, Klesius and Hite (1993) used a repeated reading intervention to increase the number of words read correctly, decrease the number of miscues and improve the comprehension of thirteen middle-school students that were determined to be below

grade level. All thirteen participants increased the number of words read per minute and reduced the number of mistakes made during the reading. The nonrepetitive group decreased the number of errors committed from 10.15 to 8.38 errors made. The repeated readings group also decreased their number of errors from 9.49 to 8.62 errors made. The authors also found an improvement in comprehension by the participants after the repeated reading intervention was introduced. The repeated readings group improved their ability to retell the story from an initial score of 46.47 percent correct to 54.79 percent correct on the posttest measure.

A study examining the effectiveness of repeated reading on fluency with high-school students was conducted by Devault and Joseph (2004). The authors combined a phonics technique with repeated readings in the attempt to increase the reading fluency of three high-school students with severe reading delays. The students' initial reading levels ranged from beginning first grade to middle third grade. Results indicated that all students increased the number of words read correctly from the repeated reading intervention. Reading fluency was recorded at baseline with students obtaining scores of 36, 62 and 52 words read correctly per minute. Upon completion of intervention phase the student increased their scores to 74, 96 and 81 words read correctly per minute. These finding would indicate that repeated readings is an effective strategy to improve the reading fluency of high-school students that exhibit reading difficulties.

Valleley and Shriver (2003) conducted a study using a multiple baseline across participants design to determine the effects of a repeated readings intervention on the fluency and comprehension of four high-school males served in a residential facility. Participants were chosen if they had reading rates thirty to fifty words correct per minute

less than a comparison group. The comparison group was four males from the same facility that were nominated as exhibiting average reading ability. All participants improved their fluency on fourth and fifth grade passages with the exception of one student. The participants' range of words read correctly per minute was 70 to 106 during baseline and ranged from 85 to 107 during intervention phase. On fifth grade passages the three participants ranged from 64 to 92 words read correctly and during intervention phase ranged from 97 to 107 words read correctly per minute. The pre and posttest scores on ninth grade passages indicate an average improvement of 13.3 words read correctly per minute while the comparison group averaged an increase of 3 words per minute. These results indicate that the repeated reading intervention was effective in increasing the reading fluency of these high-school student that were considered below average readers. Overall, repeated reading has shown to effectively improve the reading fluency of a diverse population of students exhibiting varied reading difficulties on a range of grade levels.

After assessing the data it would appear that the repeated reading intervention does increase the number of words read correctly per minute and improves the reading comprehension of the passages read by students from culturally and economically diverse backgrounds. These are the answers that were being sought from the research questions posed by the study.

#### Limitations of Study

As with all single-subject research an inherent limitation is the number of participants in the study. The study began with four participants, but when one participant moved out of the district the study concluded with three. Although a change in level

across three different participants at three different points in time is sufficient to establish a functional relationship between the dependent and independent variables (Tawney, et al., 1984) there are still questions to the generalization of the independent variable to a broader audience. Because this was a replication of other studies this will add to the existing knowledge base about the efficacy of a repeated reading intervention on increasing the reading fluency and improving the reading comprehension of students the exhibit reading difficulties.

A second limitation to the current study was that the participants only represented two ethnic groups. One participant was African-American and two participants were from Hispanic families. The fourth student, who did not finish the study, was from a Caucasian background. Although there were three ethnic groups represented as the study commenced, only two were represented at the conclusion. This does not allow for comparisons to be made amongst the ethnic groups as to the effectiveness of this intervention.

A third limitation to the current study was the fact that all three participants were diagnosed with a learning disability. Although the findings were encouraging for use with students with a learning disability, information on how effective this intervention is with students with different diagnosis was not gathered. A population with various disabilities would have made it possible for comparisons to be made between these students and others with differing diagnosis.

A fourth limitation to the current study was the lack of participation by female students. The four participants were all male students in the seventh grade. Because the students in this class all exhibited reading difficulties the participants were chosen from

this class. However, the class in which these participants were chosen there were no female students. This did not allow for comparisons to be made between the repeated reading intervention and the different genders.

A final limitation to the current study was that all the participants were in the seventh grade. Due to the fact that all the students exhibited reading difficulties the population was chosen from this class. A more diverse population of students from different grades would have enhanced the generalization of the intervention across ages. This would have allowed for comparisons to be made between the repeated reading intervention and differing grade levels.

#### Implications for Future Research

Replication of the current study should take place to further the existing knowledge base on repeated reading. However, any researcher considering replicating the current study should consider implementing the following recommendations to further improve what is known about the intervention and who will benefit from its implementation.

The researcher should consider using a group design with the repeated reading intervention. This would allow a broad population to be exposed to the intervention. Doing this would expand the population that has been exposed to repeated reading strengthening the generalization aspect of the intervention. It would also allow for comparisons to be made between differing groups.

Secondly, the research should use a more diverse population. The current study's focus was on the outcomes of students from economically and culturally diverse backgrounds. A replication of this study should use participants from similar

backgrounds along with participants from more affluent backgrounds. This would allow for comparisons to be made as to the efficacy of the intervention with different populations.

Third, the researcher should broaden the grade levels that are exposed to this intervention. The current study used only seventh grade students. A replication of the current study should broaden the population that is in the study. Having participants from elementary and high schools would also strengthen the generalization aspect of repeated reading.

Fourth, the researcher should expand the population to include females. The current study only included male participants. Any replication of the current study should include female students to compare how effective the repeated reading intervention is with that group.

Lastly, the researcher should not only expand the participation of students with different disabilities, but should also include students that are not diagnosed with a disability. The current study only included students that were diagnosed with a learning disability. Including students diagnosed with different disabilities and some without a disability would allow comparisons to be made as to the effectiveness of the intervention. This would give credibility to repeated reading as an effective strategy that could be used in a pyramid of interventions model.

### Conclusion

The study embarked on the pursuit to answer whether a repeated reading intervention would increase the number of words read correctly and improve the reading comprehension of students that exhibit reading difficulties and are from culturally and

economically diverse backgrounds. The data indicate that a repeated reading intervention can increase the number of words read correctly per minute while simultaneously reducing the number of miscues a student will make. The data also point to improvements in reading comprehension especially in the ability of the student to correctly answer questions on passages when the answers are not explicitly revealed in the story.

Repeated reading also lends itself well to be used as an effective strategy throughout the tiers in a pyramid of intervention model. Because the repeated reading intervention does not rely on standardized test or an intelligence quotient to determine if a student needs additional reading assistance it would suit the needs of practitioners while at the same time appeasing researchers. The repeated reading intervention was not only effective in increasing reading fluency and improving reading comprehension it was also easily implemented with the small group. It is very important to practitioners to be able to easily implement strategies that will improve student achievement in large or small group settings.

However, there are several questions that arose from the current study. First, will a repeated reading intervention be effective with students that are not diagnosed with a disability? Second, will a repeated reading intervention be effective with females that are diagnosed with a disability? Third, will a repeated reading intervention be effective with males and females that are diagnosed with a disability other than a learning disability? Fourth, will a repeated reading intervention be effective with other ethnic groups besides African-American and Hispanic. Finally, can a repeated reading intervention be implemented on a broad scale to fit inside the pyramid of interventions model? Future

research on repeated reading should focus on answering these questions that were not addressed in the current study.

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## APPENDICES

Appendix A. Sample of reading passage and comprehension question.

## Surprise Party

My dad had his fortieth birthday last month, so my mom planned a big surprise party for him. She said I could assist with the party, but that I had to keep the party a secret. She said I couldn't tell my dad because that would spoil the surprise.

I helped Mom organize the guest list and write the invitations. I was responsible for making sure everyone was included. I also addressed all the envelopes and put stamps and return addresses on them. We wrote the invitations before Dad came home from work. We had to sneak them to the post office so Dad wouldn't see them. We planned to have the party at Dad's friend's house. All of the guests were supposed to come early so Dad wouldn't be suspicious. Dad thought he was just having dinner with his friend.

Every time I looked at Dad before the party I thought about the secret. It was very hard not to say something. I thought I had to tell someone or I would burst. I decided to whisper my secret to my pet cat because I knew she could be discreet.

Finally the day of the party came. Everybody waited at our friend's house with the lights turned off and everyone hidden. Then Dad rang the doorbell and Dad's friend opened the door. We all yelled, "Surprise!" Dad was so shocked he was speechless. Dad's brothers and parents were there. All his friends from work came, and even some old friends from high school were there.

## SURPRISE PARTY

1. How old was the dad? (40)
2. Where did they have the party? (at friend's house)
3. Who did the child tell the secret to? (the pet cat)
4. What did everyone yell when dad opened the door? (surprise!)
5. What did the dad say when he saw it was a surprise party? (nothing, he was speechless)

Appendix B. Survey given to participating resource teacher to measure ease of implementation and perceived effectiveness.

### Repeated Reading Survey

How many years of experience do you have as a teacher? \_\_\_\_\_

How many years experience have you had at teaching reading? \_\_\_\_\_

List all grade levels you have taught in your career. \_\_\_\_\_

Answer the following question based on a scale of 1 to 10

with 1 equaling total disagreement and 10 equaling total agreement.

1. The repeated reading program was easy to implement in the classroom. \_\_\_\_\_
2. The repeated reading program is something I will use in the future. \_\_\_\_\_
3. The repeated reading program was effective in improving the reading fluency and improving the reading comprehension of the students in the class. \_\_\_\_\_

Appendix C. *Copy of Parental Consent Form*

## PARENTAL PERMISSION FORM

I agree to allow my child, \_\_\_\_\_, to take part in a research study titled, "Implementing a Repeated Reading Intervention to Improve the Reading Fluency and Comprehension of Middle-School Students Exhibiting Reading Difficulties", which is being conducted by Mr. Michael Baskette, from the Communication Sciences and Special Education Department at the University of Georgia (706 542-6446) under the direction of Dr. Cecil Fore, III, 706 542-4603. I do not have to allow my child to be in this study if I do not want to. My child can refuse to participate or stop taking part at any time without giving any reason, and without penalty or loss of benefits to which she/he is otherwise entitled. I can ask to have the information related to my child returned to me, removed from the research records, or destroyed.

- The reason for the study is to find out if repeatedly reading a passage will improve fluency and comprehension.
- Children who take part may improve their reading skills. The researcher also hopes to learn something that may help other children learn reading better in the future.
- If I allow my child to take part, my child will be asked to read short passages and answer some questions while the researcher watches. The researcher will ask my child to do these activities four times a week for 20 minutes for seven weeks. This activity will take place during study skills time and will not interfere with reading lessons. If I do not want my child to take part then she/he will be allowed to study as usual.
- The research is not expected to cause any harm or discomfort. My child can quit at any time. My child's grade will not be affected if my child decides not to participate or to stop taking part.
- Any individually-identifiable information collected about my child will be held confidential unless otherwise required by law. My child's identity will be coded, and all data will be kept in a secured location.
- The researcher will answer any questions about the research, now or during the course of the project, and can be reached by telephone at: 678 316-9411. I may also contact the professor supervising the research, Dr. Cecil Fore, III, Communication Sciences and Special Education, at 706 542-4603.
- I understand the study procedures described above. My questions have been answered to my satisfaction, and I agree to allow my child to take part in this study. I have been given a copy of this form to keep.

Michael Baskette

1/11/08

Name of Researcher

Date

Signature

Telephone: 678 316-9411

Email: michael.baskette@gcssk12.net

\_\_\_\_\_

1/11/08

Name of Parent or Guardian

Signature

Date

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your child's rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

*Appendix D. Copy of Minor Assesnt Form.*

January 11, 2008

### **Minor Assent Form**

Dear Participant,

You are invited to participate in my research project titled, "Implementing a repeated reading intervention to improve the reading fluency and comprehension of middle-school students exhibiting reading difficulites." Through this project I am learning about how boys and girls learn to read.

If you decide to be part of this, you will allow me to work with you on your reading. You will talk to me about your reading. You will allow me to watch you and take notes while you are reading. Your participation in this project will not affect your grades in school. I will not use your name on any papers that I write about this project. However, because of your participation you may improve your ability to read. I hope to learn something about reading that will help other children in the future.

If you want to stop participating in this project, you are free to do so at any time. You can also choose not to answer questions that you don't want to answer.

If you have any questions or concerns you can always ask me or call my teacher, Dr. Cecil Fore at the following number: 706 542-4603.

Sincerely,

Michael Baskette  
Communication Sciences and Special Education  
678 316-9411  
mrbasket@uga.edu

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I understand the project described above. My questions have been answered and I agree to participate in this project. I have received a copy of this form.

---

Signature of the Participant/Date

**Please sign both copies, keep one and return one to the researcher.**

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu.

*Appendix E. Vita***Vita**

**Michael Baskette**  
 5844 Rivermoor Drive  
 Braselton, GA 30517  
 (678) 249-8830

***Academic History***

Due to receive Ph D. in Special Education from University of Georgia  
 May, 2008

*Master of Arts of Teaching E/BD*, Piedmont College  
 December, 2003

*Bachelor of Arts/Psychology*; University of Georgia  
 August, 1996

***Work Experience******Gainesville City Middle School-Special Education Department Chair***

Aug. 2007-Present

***Gwinnett County Public Schools-Dacula High School***

Aug. 2002 to July 2007

- ❖ *Highly Qualified Cognitive P-12 SPED (Math, Language Arts & Social Science)*
- P-8 SPED (Science)*
- ❖ *Highly Qualified Consultative (Behavior Disorders & General Curriculum)*

***Walton Co. Board of Education-Atha Road Elementary***

Nov. 2001 to May 2002

Special Education Teacher rotating between resource room and E/BD self-contained room.  
 Trained in CPI and served on the CPI team at Atha Road Elementary

***Collins Hill Golf Club***

Jan. 1999-Nov. 2001; March 1994-April 1996; June 1990-March 1993

Worked as Director of Golf. Responsibilities were management of all operations of golf facility.

***Walton Co. Board of Education-Rutland Psychoeducational Services***

August 1997-January 1999

Special Education teacher in an SE/BD classroom with 6-10 middle school children within the Rutland psychoeducational program housed in Walton County. Based on WIAT pre-and post-testing, the students in my classroom achieved the highest gains of all Rutland classes in reading that year. Steady progress made toward IEP behavioral goals and objectives due to behavioral management reward system.

***Americorps Task Force***

September 1996-July 1997

*Partnership Against Domestic Violence*- Taught a cooking class for the women staying at the shelter. Also responsible for upkeep of the building and the grounds.

*Project Safe*- Acted as a confidant and “big brother” to children ranging in age from 1 to 13 years who were staying with their mothers at this facility.

*Northeast Georgia Homeless Coalition*- Responsible for answering hotline calls most commonly from single mothers facing homelessness. According to the situation, made appropriate referrals based on available resources in the community.

*Foodbank of Northeast Georgia*- Delivered food weekly to 250 elderly individuals in Athens, Georgia.

### ***Book Chapters***

Bender, W. N., Ulmer, L., Baskette, M. R., and Shores, C. (in press). "Unanswered questions on RTI." In, Bender, W. N., and Shores, C. (in press). *Response to Intervention; A Practical Guide for Teachers*. Thousand Oaks, CA.: Corwin Press.

### ***Peer Reviewed Articles***

Baskette, M. R., Ulmer, L., & Bender, W. N. (2006). The Emperor Has No Clothes! Unanswered Questions and Concerns on the Response to Intervention Procedure. *The Journal of the American Academy of Special Education Professionals*. (Fall, 2006; Url: aasep.org), pp 4 - 24.

### ***Professional Presentation***

Harvard Graduate Student Education Research Conference. *Classroom Techniques for Monitoring Progress under the Response to Intervention Model*. Presented at Harvard University, February, 2007.

Georgia Council for Exceptional Children Conference. *Classroom Techniques for Monitoring Progress under the Response to Intervention Model*. Presented at State CEC Conference in Macon, February, 2007.

Association on Positive Behavioral Supports, *Using A Response To Intervention Model To Diagnose Students With Emotional Disturbance*. Presented at the 5<sup>th</sup> International Conference in Chicago, March, 2008.

Council for Exceptional Children Conference, *Progress Monitoring Techniques under the Response to Intervention Model*. Presented at the National Conference in Boston, April 2008.